



MR HH415 LI VP EU

Service Manual

MARINE HANDHELD TRANSCEIVER

Catalog Number: MR HH415 LI VP EU

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SPECIFICATIONS

Measurement Condition

Frequency Range:Transmit	MHz	156.025 To 157.425.
Frequency Range:Receive	MHz	156.050 To 162.025
Number of Channels		59 INT Channels 57 USA Channels 57 Canada Channels All marine channels
Memory Channels		
Oscillate Mode		PLL
Modulation		FM(16K0G3E)
Channel Spacing	KHz	25
Frequency Stablity	PPM	±10
Stantard Operation Temperature	°C	-20 To+55
Normal Working Voltage	V	7.2(With 6 AA Ni MH Battery)
Low Limit Working Voltage	V	6.3
Battery Lifetime(Tx5%/Rx5%/Standby90%)	Hour	12.0(7.2V/1500mAH)
Memory Retented		EEPROM
Antenna Socket		TNC
Display		LCD With Backlight
Built-In Speaker		Diamter 40mm / Impedance 8 ohm
Dimension:		64mm(W)×135mm(H)×38.5mm(D)
Weight:(Without Battery)		250g

RECEIVER	UNIT	LIMIT
Sensitivity for 12dB sinan	dBm	≤ -114
Squelch		
a) squelch threshold	dBm	≤ -116
b) squelch tight	dBm	-113 ~ -107
c) hysteresis (tight)	dB	2 ~ 7
Rated audio output		
@5% Thd Speaker	mW	≥ 250
Deviation sens.for rated output(VR@max.)	±kHz	≤ 2.5
Max.S/N ratio @ 1mV	dB	≥ 40
Audio frequency resp.		
@300HZ	dB	9 ± 3
@2500HZ	dB	-9 ± 3
Spurious response rejection		10MHz to 1GHz

78.4MHz	dB	≥ 46
39.2/ 146.8/ 154.4/ 155.9/		
157.8/ 158.2/ 163.9/ 249.4MHz	dB	≥ 50
Other frequency	dB	≥ 70
Adjacent ch.rejection	dB	≥ 55
Image rejection	dB	≥ 65
Intermod rejection (3-Gen.Method)	dB	≥ 60
Scan time. per channel	ms	≤ 200
Speaker output 8Ω load @ max vol.	mW	≥ 400
Standby current	mA	≤ 50
Receiver current @ max vol.	mA	≤ 200
Charging current	mA	720 mA \pm 80

TRANSMITTER	UNIT	LIMIT
Carrier power(no mode)		
Hi mode	W	5 \pm 0.8
Mid mode	W	3 \pm 0.5
Lo mode	W	0.8 \pm 0.2
Carrier frequency tolerance	ppm	± 10
Modulation limiting	\pm kHz	4.3~ 4.9
Modulation sens.for ± 3 kHz dev.	mV	7 \pm 3
Audio frequency response (1KHz / 0dB ref)		
@300HZ	dB	-12 \pm 3
@2500HZ	dB	+6 \pm 3
Audio distortion @ 2.5 KHz dew.	%	≤ 5
Hum and noise ratio	dB	≥ 35
Spurious Emission	dBm	≤ -36
Current drain (TX)		
Hi mode	A	≤ 1.9
Mid mode	A	≤ 1.5
Lo mode	A	≤ 0.9
Mic Modulation Sen. (at Sound level of 94 dBA)	\pm kHz	≥ 1.5
Mic Modulation Limiting (at Sound level of 110 dBA)	\pm kHz	4.0 ~ 4.9

Note: All units should be able to approximate these specs. Some will exceed these specs, and others may drop slightly below them. Limit specs represent the absolute worst condition that might still be considered acceptable. A unit never fail to meet limit specs.

THEORY OF OPERATION

This PLL - controlled VHF marine transceiver provides an accurate and stable multi-channel operation.

The transceiver consists of 7 main sections:

- **Transmitter**
- **Receiver**
- **Low voltage detection**
- **Vibration Alert**
- **Voice recorder**
- **Local oscillator PLL (Phase Lock Loop) Circuit**
- **Memory backup**

- **Transmitter**

The audio is picked up from the internal MIC, the audio signal is then amplified by Audio Amplifier, U4 LM324 (2/4), U4 (3/4) and filtered by a low pass filter U4 (4/4). The audio is adjusted with VR2 to obtain a suitable Audio frequency response, and then modulated with the carrier by VCO, through Varicap (D11).

The modulated signal output from the VCO is pre-amplified by Q5, Q4 and Q3. Then it is amplified by Q12, Q6. The amplified signal then passes through a low-pass filter network which consists of C72, L8, C66, C15, L6, C4 filters out spurious emission, and the antenna switching circuit, D1, D2. The signal is filtered by another low-pass filter circuit which consists of C16, L2, C62, C12, L1, C5, and C1. These low pass filters are necessary to suppress the second and third harmonics. The signal is then fed into the antenna input and radiated out. TX current is converted into a voltage signal, that signal fed into U2 LM2904 (2/2) for sampling. U2 is the Automatic power control (APC) circuit. When the unit is transmitting, the audio signal is added to the TX VCO Varicap D11. The capacitance of D11 is varied following the audio signal and when mixed with the carrier to form the modulated signal.

- **Receiver**

The receiver uses a double frequency super-heterodyne circuit. The first Immediate Frequency (IF) is 21.4 MHz and the second is 450 kHz.

The RF signal is received by the antenna, and passes through a low-pass filter network C1, L1, C5, C12, L2, C62, C16, C20, L7, and C67 to filter out the unwanted signals, the antenna switching circuit D1, D2 switching circuit to receive. The received RF signal is sent to a SAW filter F1 to filter out-of-band signals. The RF amplifier Q7 amplifies signals within the range of the frequency coverage and passes through another saw filter F2 to further filter out-of-band signals. The RF signal then is mixed with the local oscillation frequency by the mixer Q8. A first IF (Immediate Frequency) 21.4 MHz is produced. The IF is

passed through a pair of crystal filter F3 (1/2), F4 (2/2) to further filter other unwanted signals. The first IF then is amplified by Q2 and the IF amplifier U1 (BA4116). U1 is a integrated RF amplifier which consists of a local oscillator, a demodulator, a second mixer, squelch control circuit, and RF amplifier. The 21.4 MHz IF then is mixed here with second mixer and converted into 2nd Immediate Frequency (IF) 450 kHz. The 2nd IF passes through a ceramic filter F5 to filter out the residue unwanted signal at pin 5 of U1 (BA4116) output this final IF signal and the Audio signal is output at pin 9 of U1 (BA4116). The audio signal is fed through a volume control VR3 and finally amplified by Audio amplifier U11 (NJM2070) and heard in the speaker. The squelch control is also controlled by U1 (BA4116). The second IF passes through U1 (BA4116) internal squelch control R90, C141, C142 form as a squelch amplifier. The ceramic filter produces a squelch signal (RF noise). Pin 14 of U1 sends the digital squelch control signal to the CPU mute the audio speaker path. Pin 12 of U1 output a RSSI level to the CPU.

- **Low Voltage Detection**

The battery voltage, divided by R148, R149 is input to U7 Pin 6 for voltage level sample.

- **Vibration Alert**

When vibration alert is on, Pin54 of U7 output HI level, Q23 switch on, M1 MOTORS vibrates.

- **Voice recorder**

Voice recorder consists of U10 NJM4053 and U402 ISD1730. U10 Pin14 select voice source from P13 (MIC) or P12 (RX voice). The voice signal comes to U402 Pin9. U402 store the voice in it up to 20 seconds. When U402 play, the voice come out form U402 Pin17. Then pass to U10 Pin15, after that pass to Pin1 (speaker) or Pin2 (TX).

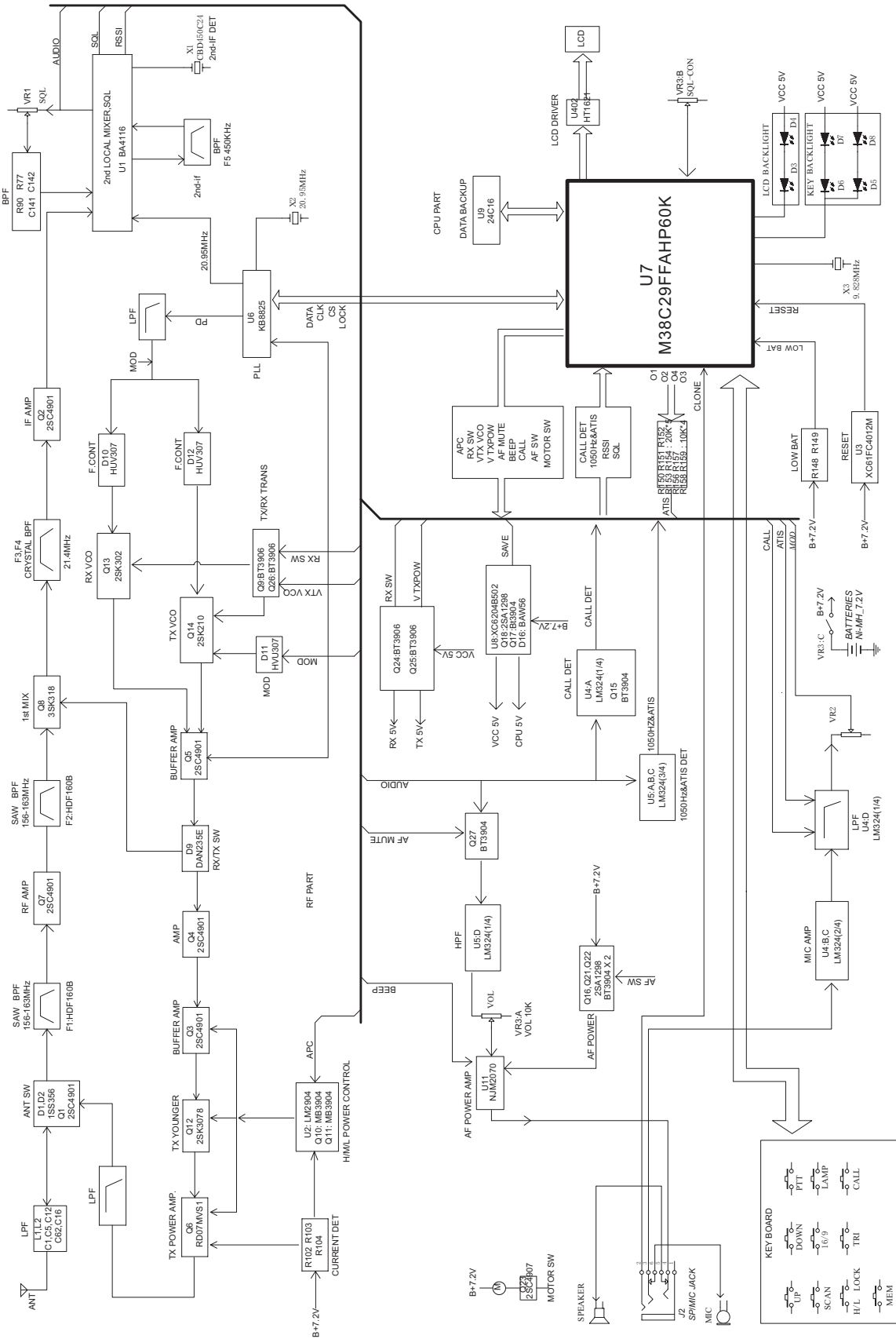
- **PLL (Phase Lock Loop) Circuit:**

The receiver and transmitter both share the same PLL (Phase Lock Loop) Circuit to produce the carrier or the receive frequency. The local oscillator consists of a fundamental frequency oscillator X1 20.95MHz and U6 (KB8825). A phase Lock Loop (PLL) U6 (KB8825), TX VCO Q14 and RX VCO Q13. The fundamental frequency is frequency divided by U6 and a 12.5 kHz signal is produced. When the VCO frequency applied to and frequency divided by U6 produces a frequency comparable to 12.5 kHz, PLL will control the VCO. When these two frequencies are matched, a constant control voltage is output from PLL to lock VCO in desired frequency. The PLL also will output a lock indication to MCU to indicate the PLL is in frequency lock state.

- **Memory Backup**

U9 is an EEPROM AT24 C16 that acts as a memory backup for the working channel code and the system parameters. Every time when the unit is switched on, the MCU will reset the system, clear the RAM, and recall in the memory from the EEPROM to refresh the RAM in CPU U7.

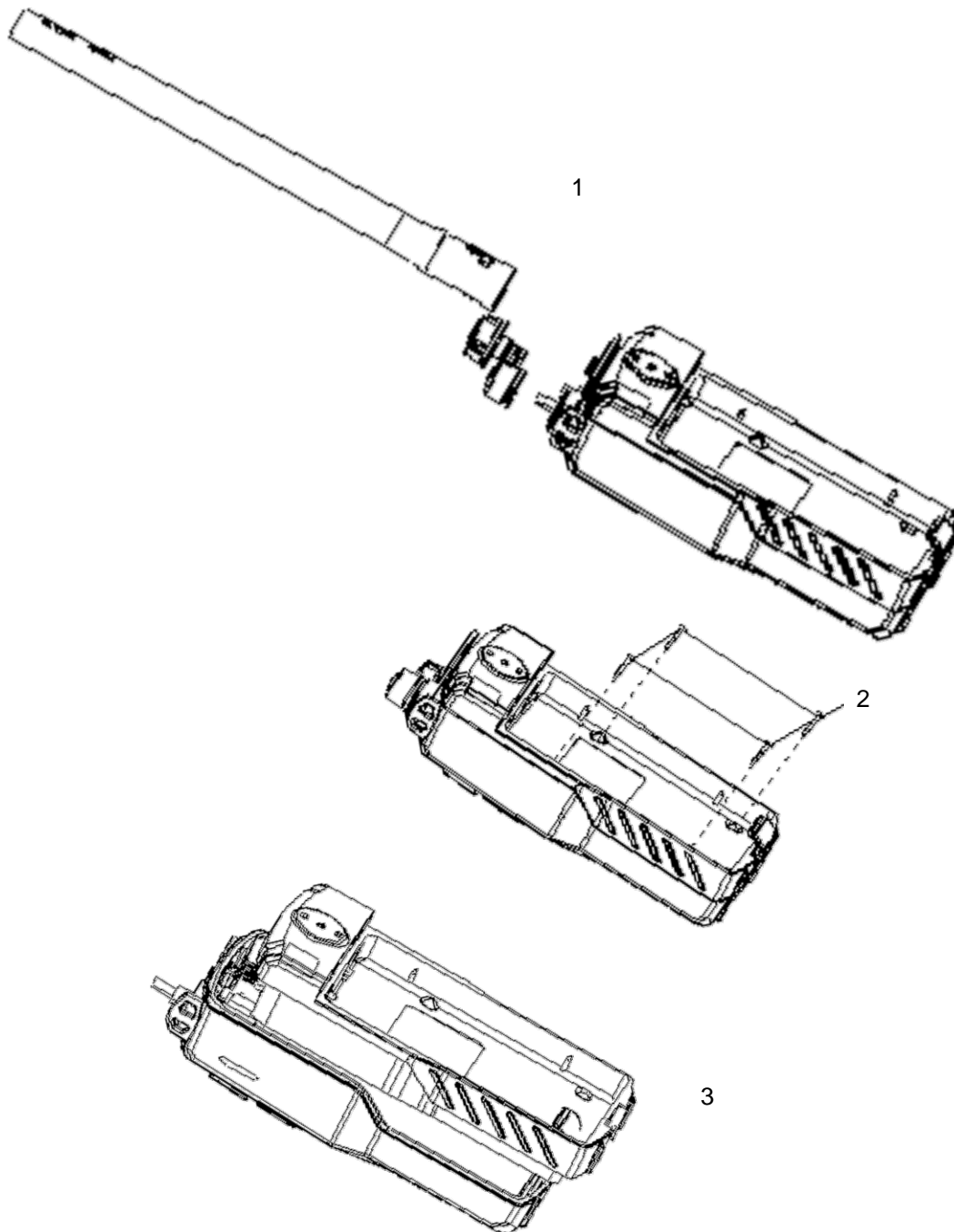
BLOCK DIAGRAM



DISASSEMBLY INSTRUCTIONS

To remove the front and rear panels from the main chassis:

1. Remove the rubber antenna, SPK/MIC knob and the VOL/SQL knob from the main unit.
2. Remove 4 screws from the rear housing of main unit.
3. Detach the die cast from the front housing.



ALIGNMENT AND PROCEDURES

This unit has been fully aligned at the factory before shipment and does not normally require further adjustment. When necessary, however, the unit may be aligned as indicated below.

Do not adjust any circuit in this radiotelephone unless you understand the circuit operation and have experience in adjusting the radiotelephone. Tampering with the radiotelephone may upset the alignment and lower its performance.

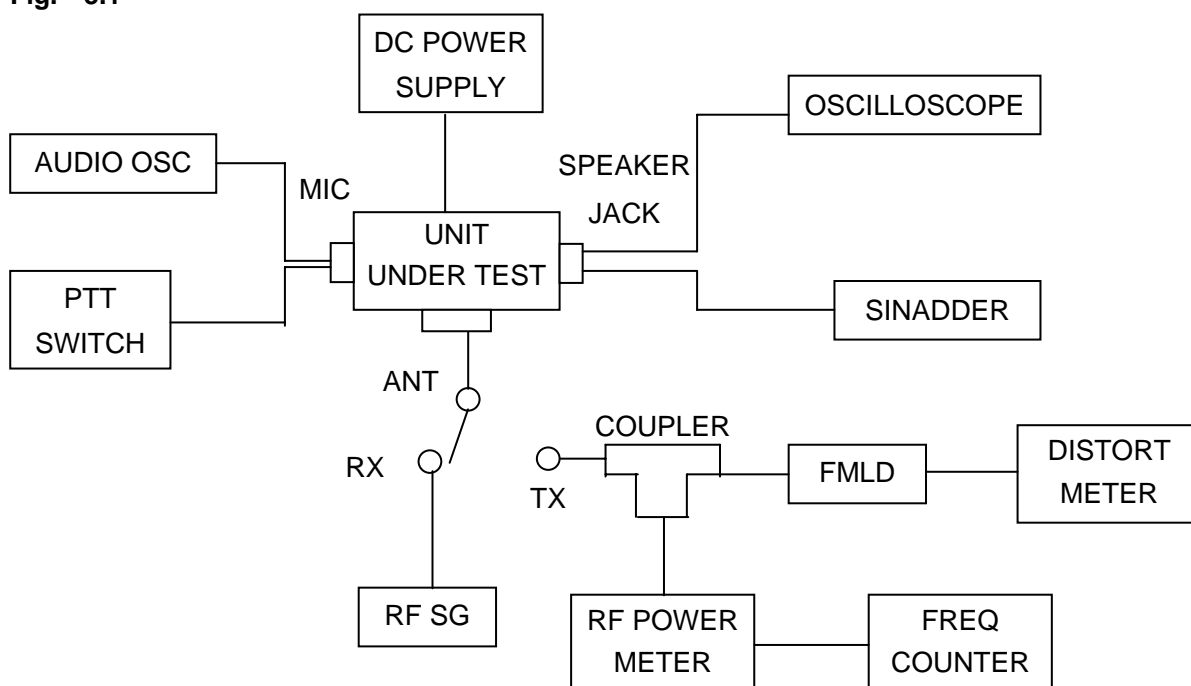
The test equipment listed below are used for the test setup shown in Fig. 3.1.

This test setup used either partially or totally during the following adjustments.

Test Equipment

- | | |
|--|---------------------------------|
| 1) DC Power Supply (7.2V DC) | 0 - 15V 3A max. |
| 2) RF Power Meter | 10 W 50 Ohm 100-200 MHz |
| 3) RF Signal Generator | 100-200 MHz, 50 ohm termination |
| 4) FM Linear Detector (FMLD) | 100-200 MHz |
| 5) Frequency Counter | 1-500 MHz |
| 6) Oscilloscope | 20 MHz |
| 7) Distortion Meter | |
| 8) Sinadder | |
| 9) Audio Oscillator | |
| 10) Toggle Switch (for use as PTT switch). | |

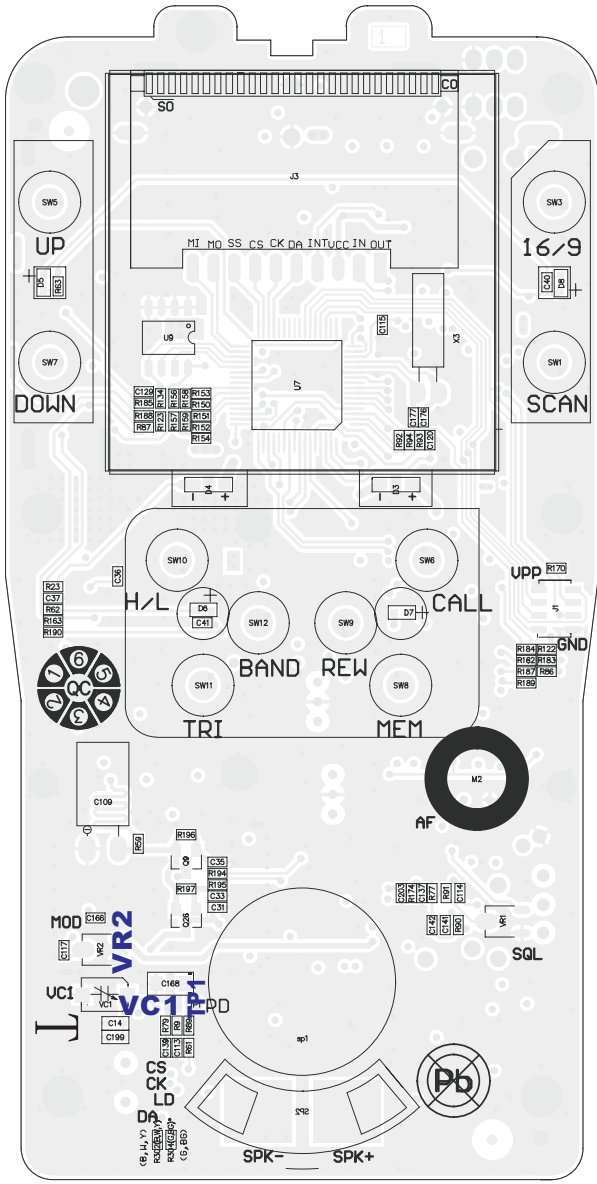
Fig. 3.1



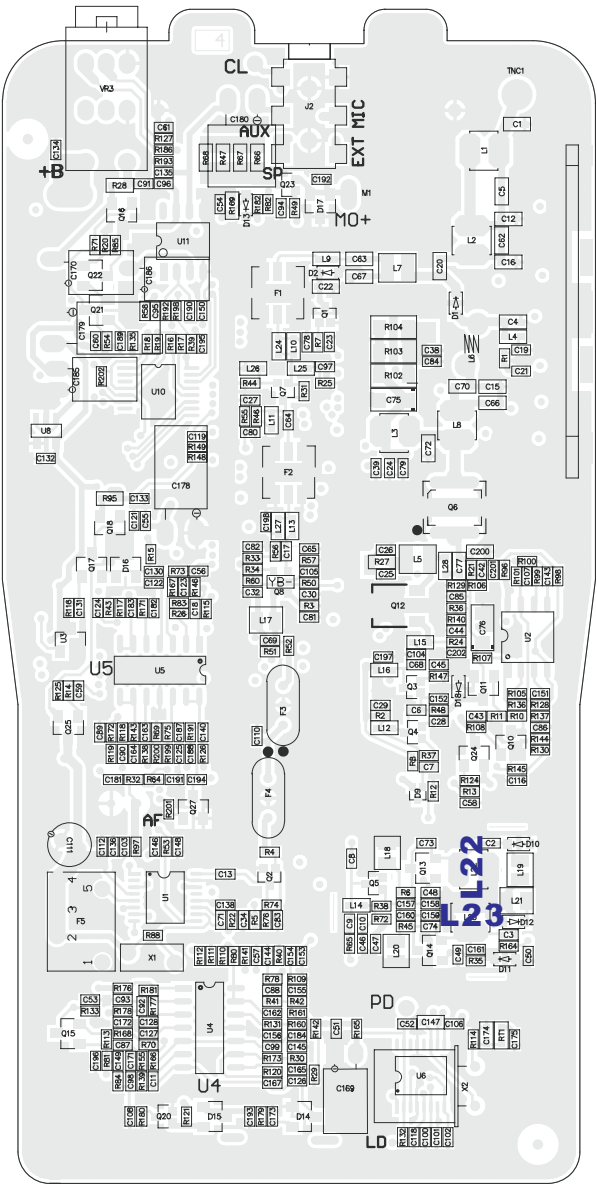
ADJUSTMENT PROCEDURE

Step	Adjustment	Test Point	Procedure
1	L22 Receive	TP1	<ol style="list-style-type: none"> 1. Connect digital voltmeter to TP1 on RF PCB. 2. Set CH01. 3. Adjust L18. 4. TP1 voltage 1.2~1.6V DC.
2	L23 Transmit	TP1	<ol style="list-style-type: none"> 1. Connect a digital voltmeter to TP1 on RF PCB. 2. Set CH01. 3. Adjust L20. 4. TP1 voltage 1.2~1.6V DC.
3	VC1		<ol style="list-style-type: none"> 1. Connect the antenna coupler output to a frequency counter. 2. Set channel to CH01 (156.050 MHz). 3. Adjust VC1 to obtain a frequency reading 156.050 MHz\pm200Hz.
4	VR2 Modulation		<ol style="list-style-type: none"> 1. Connect the antenna coupler output to an FM linear detector. 2. Connect Audio Oscillators to Microphone Jack. 3. Set unit to transmit mode. 4. Set audio oscillator output to -23dBm 1 kHz. 5. Adjust VR2 to obtain \pm4.5 kHz deviations.

Main PCB

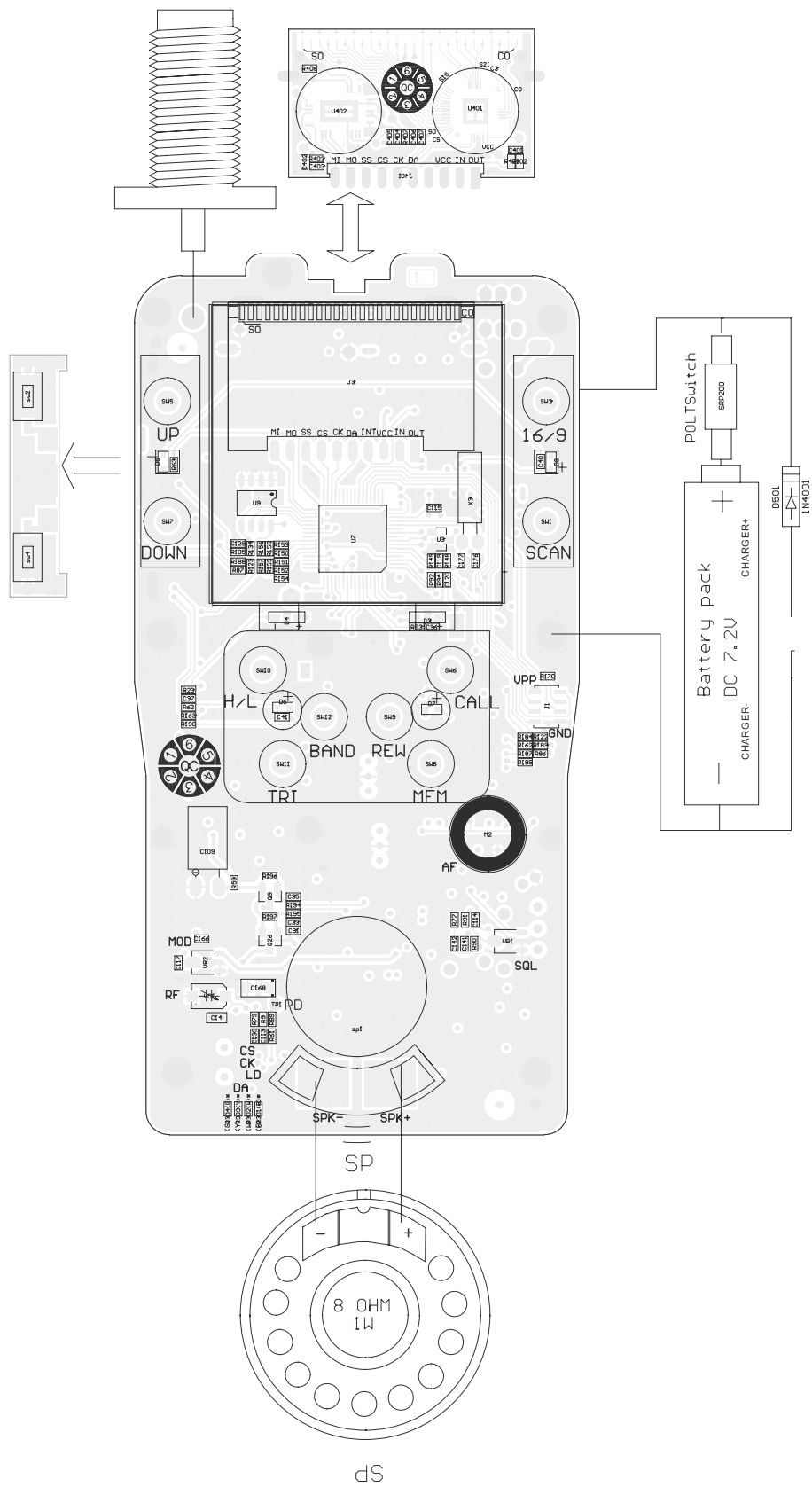


Top View

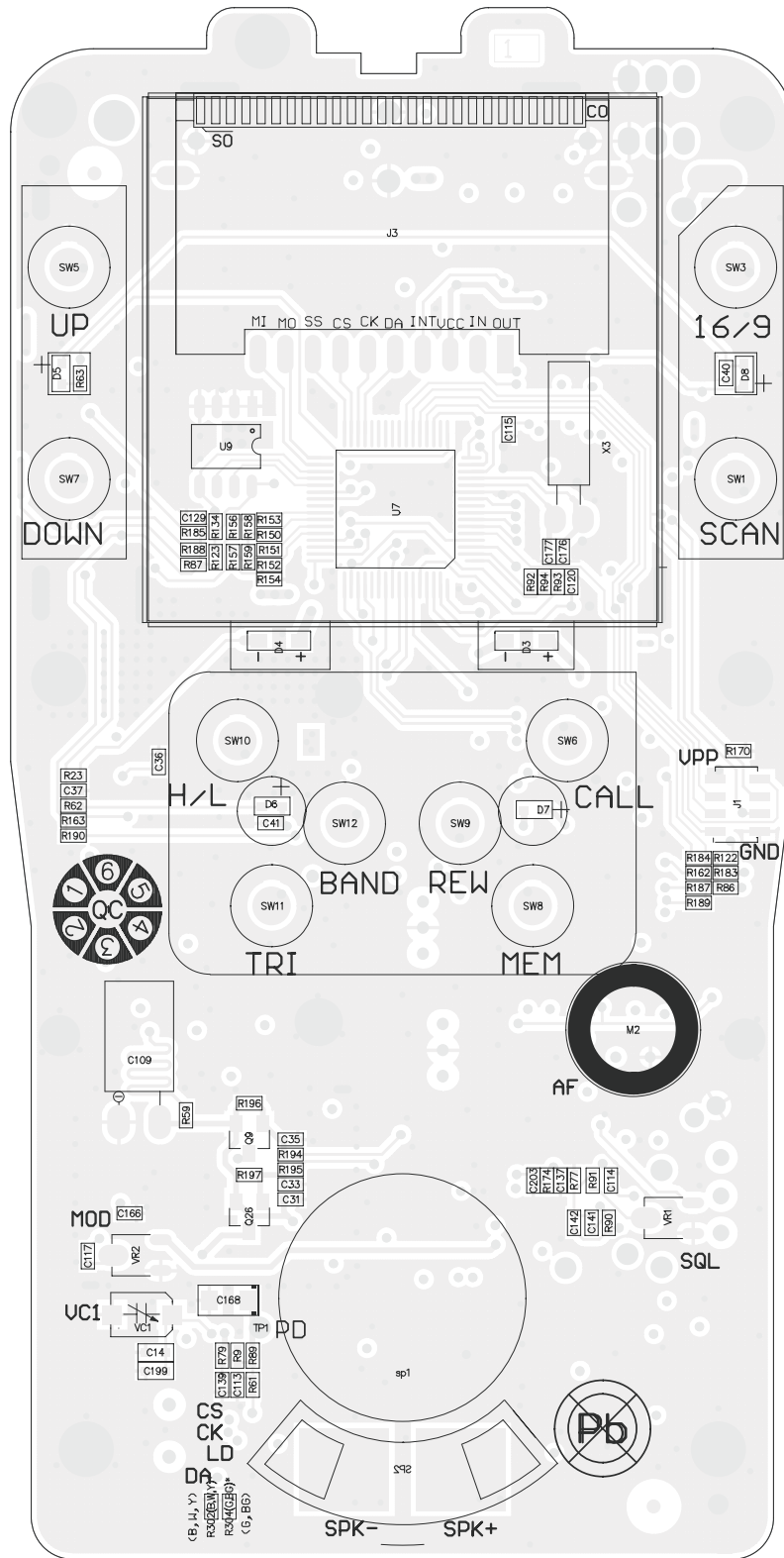


Bottom View

WIRING DIAGRAM

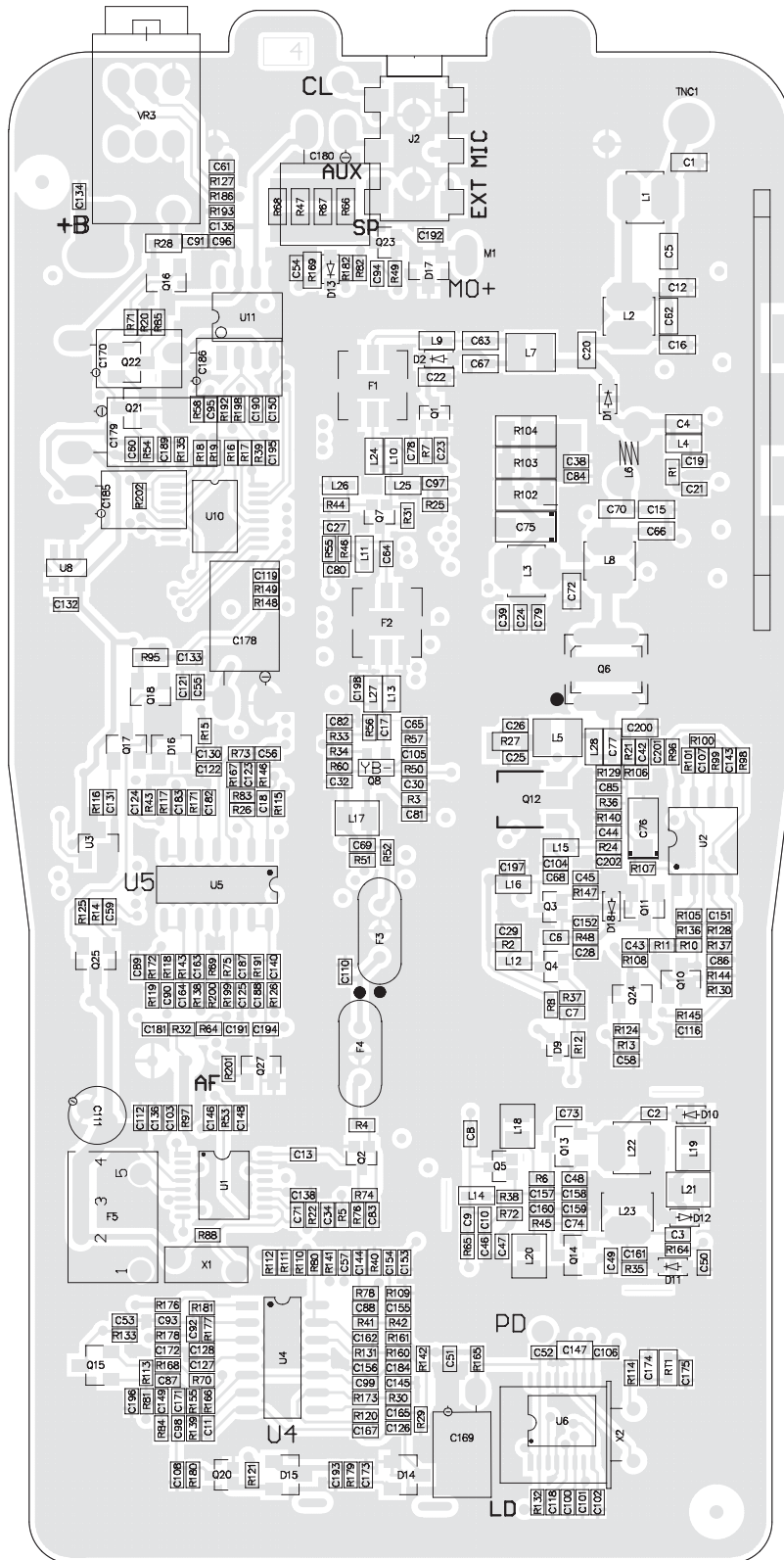


Main PCB Top View



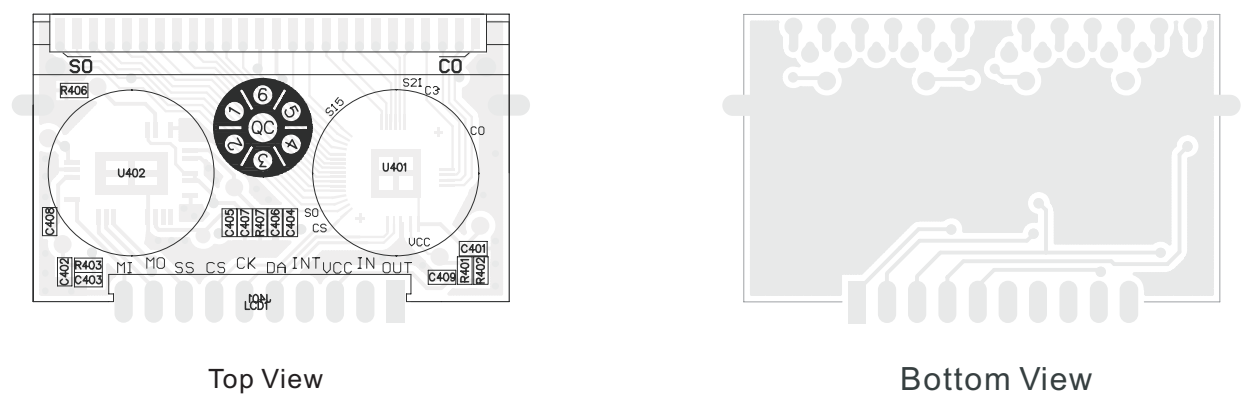
PRINTED CIRCUIT BOARD

Main PCB Bottom View

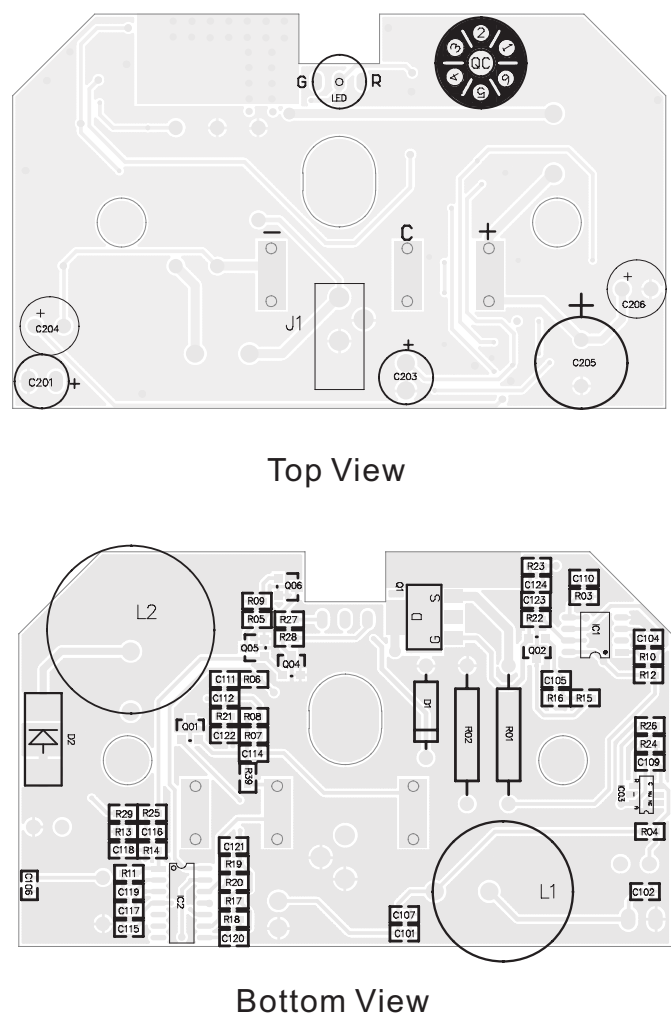


PRINTED CIRCUIT BOARD

LCD PCB



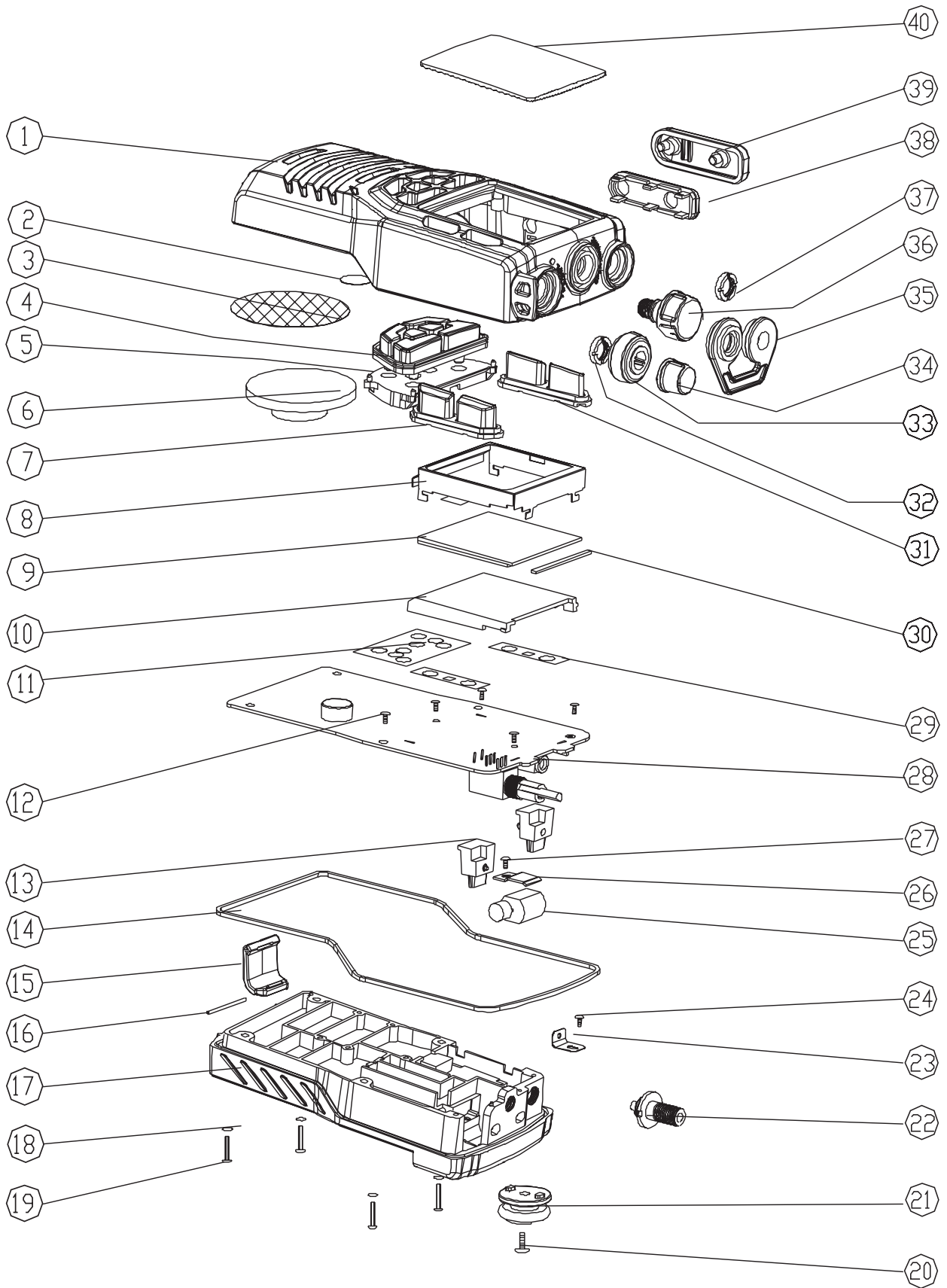
Charger PCB



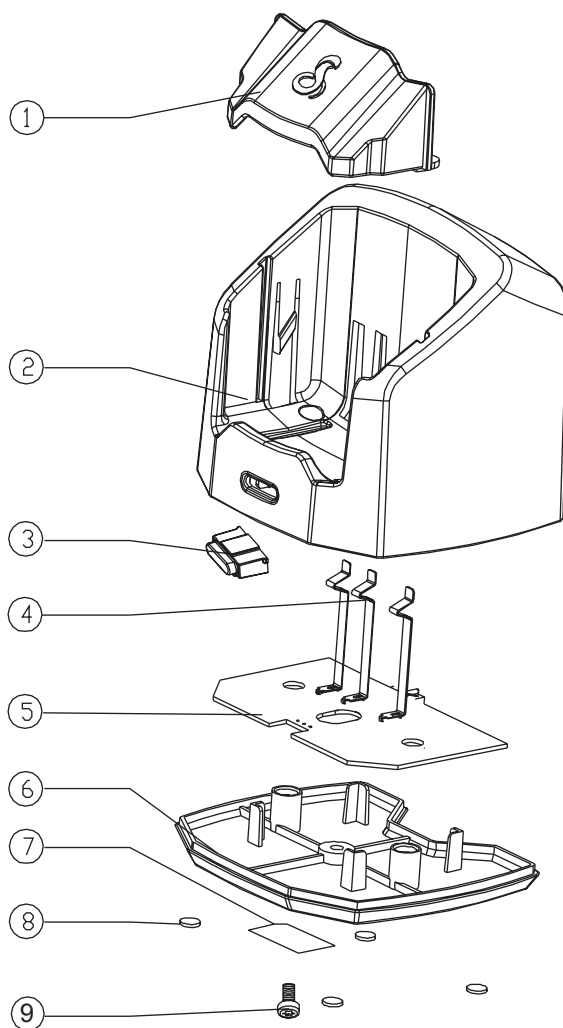
TROUBLE SHOOTING

Item	Symptom	Possible Cause
1	Unit does not turn on.	<ul style="list-style-type: none"> ● Defective power switches VR3. ● Check the battery voltage. ● Defective regulator U8.
2	Speaker no sound with AF signal applied to volume control	<ul style="list-style-type: none"> ● Defective volume control. ● Defective speaker. ● Defective U11 and/or associated components.
3	Squelch circuit inoperative	<ul style="list-style-type: none"> ● Check squelches control. ● Defective U1 and/or associated circuitry between pin 9, 10 and 11.
4	No receive (RX)	<ul style="list-style-type: none"> ● Defective regulator U8. ● Check TP1 voltage 0.5 – 4V; ● Check second OSC 20.95MHz, pin9 of U6; ● Defective Q7, Q8, Q2. ● Check U1 audio output voltage at pin 9. ● Defective F1 and F2;
5	Low receiver sensitivity	<ul style="list-style-type: none"> ● Check antenna and connector for possible corrosion or bad connection. ● Failure of the output from Q7, Q8, Q2, U1 ● Check the output level of local OSC.
6	No transmit (TX)	<ul style="list-style-type: none"> ● Defective PTT switch. ● Defective regulator U8. ● Check TP1 voltage 0.5 – 4V; ● Check power transmits circuit Q12, Q6, D1, D2 and Q1; ● Check power control circuit Q17, Q18, Q24; ● Check power control circuit U2;
7	Low RF power output	<ul style="list-style-type: none"> ● Check RF power output from Q6, If it checks good, then check and antenna switching diode D1, D2. <p>If not good then check the voltage level outputs of the drive amplifiers Q3 and Q12 as well as the associated circuitry.</p>
8	Poor or no modulation	<ul style="list-style-type: none"> ● Defective microphone. ● Defective U4 and/or its associated components.
9	Deviation of transmit frequency	<ul style="list-style-type: none"> ● Check crystal X2and VC1.

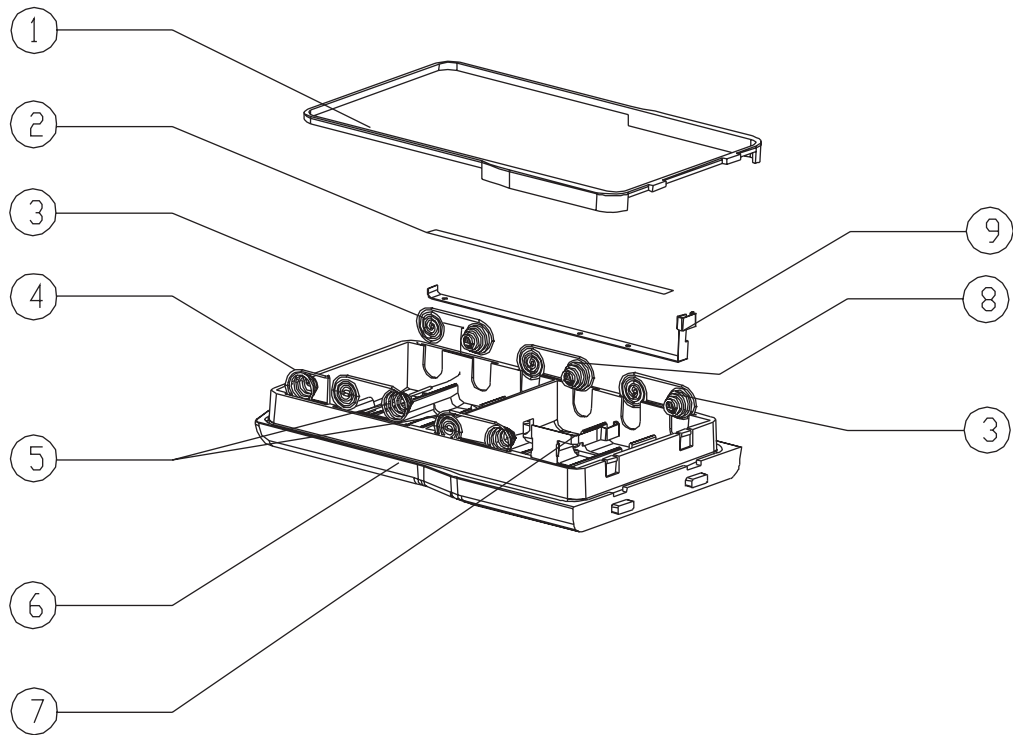
MAIN UNIT EXPLODED VIEW



CHARGER UNIT EXPLODED VIEW



BATTERY TRAY UNIT EXPLODED VIEW



MAIN UNIT EXPLODED VIEW

Ref.No.	Description	Mfr's Part No.
1	CAB FNT MU COBRA TM833USL ABS BLK 3U2X ROHS	051L003472C012
2	INSU WATERPROOF FILM D9.5MM ROHS	058LD95047-20006
3	INSU SHT- NYLON D37.3 TM832EUL SPEAKER FELT	058L002895C013
4	KEY RUB FUN -6K MAIN TM833EUL ROHS	060L002268C031
5	PLAS PLATE-- KEYBOARD MOUNT PMMA TM832EUL ROHS	056L006977D014
6	SPK FLAT 8--OHM D40-H5.2 1---W TAIHEXING TEK404P-8 OHM1W ROHS	002L240145-11004
7	KEY RUB FUN -2K RIGHT TM833USL TRANSLUCENT 433C RED 201C ROHS	060L002270C029
8	METAL PLATE----- T03 S/S LCD MOUNTING TM832EUL ROHS	063L003946C010
9	LCD TNG- TSF L37.0-W38.0T1.8 P 1/4 5.0V 6 O'CLOCK ROHS	014L019708-10005
10	LENS MAIN LCD BACK LIGHT PLATE PMMA TM832EUL ROHS	055L002778C019
11	INLAY KEY- SUS304+ADHESIVE TM833EUL COBRA ROHS	076L002625-015
12	SCREW MS M2.0L05 PH - + FL S/S ROHS	071L120053-50006
13	PLAS CAP---- ANT ABS BLK 3U2X TM832EUL ROHS	056L007041C015
14	CUSH RUB- RING FOR UNIT BLK 3U2X TM832EUL ROHS	089L003315C013
15	PLAS LATCH -- PC BLK 3U2X TM832EUL ROHS	056L006976D017
16	METAL LOCK PIN-- T01 S/S TM883USL ROHS	063L003951-011
17	METAL HOUSIN--- ALA TM832EUL DIE CASE ROHS	063L004024D019
18	CUSH SILI SCREW SLEEVE ID:18*DIA:0.8MM DC31M3G ROHS	089L002986-018
19	SCREW TS D2.6L10 PH - + FL S/S ROHS	067L352610-00200
20	SCREW MS M3.0L09 PH - + FL S/S BLK ROHS	071L130093-50001
21	PLAS CLIP---- ATTACHMENT PC BLK 3U2X TM832EUL ROHS	056L006981D010
22	CONNECTOR AT -RECEP 62 CU TM832EUL ROHS	004L990019-01007
23	METAL PALTE--- CONECTOR T03 BS NI L12 NV366	063L003684-013
24	SCREW MS M2.0L04 PH W + FL MS NI ROHS	070L142004-31104
25	MOTOR YONGLIANXING 1011FE-12TX 3.0V 250MA W/WIRE L=53MM ROHS	027L100030-11010
26	METAL PLATE----- T05 TIN PLATE MOTOR MOUNT ROHS	063L003947C017
27	SCREW M2.6*5MM PM S/S	071L126053-50008
28	INLAY KEY- SUS304+ADHESIVE TM833USL UNIT COBRA ROHS	076L002624-018
29	PCB 4L FR4- L112.5W57--T10- V4 MAIN TM832EUL L2-3:0.2MM ROHS	116L4832EU-56B42
30	RUBCON YP- 001P L30.1W2.0H5.2 ROHS	011L301801-01037
31	KEY RUB FUN -2K LEFT TRANSLUCENT 433C TM832EUL ROHS	060L002269C010
32	VOL NUT M7*2.0mm (CU)	064L570200-30009
33	KEY SQ-- TM832EUL ABS BLK 3U2X ROHS	054L004484E016
34	KEY VOL- TM832EUL ABS BLK 3U2X ROHS	054L004483D013
35	CUSH RUB- JACK CONN GREY DS 022 TM832EUL ROHS	089L003316C010
36	KEY CAP- MIC TM832EUL ABS BLK 3U2X ROHS	054L004485C011
37	ANTENNA NUT 1/4"9.0*1.8mm (CU)	064L590181-30005
38	PLAS PLATE-- PTT MOUNT PC BLK 3U2X TM832EUL ROHS	056L006978D011
39	CUSH SILI PTT KEY GREY DS 022 TM832EUL ROHS	089L003359C013
40	LENS MAIN TM833EUL COBRA PMMA ROHS	055L002777C026

CHARGER UNIT EXPLODED VIEW

Ref.No.	Description	Mfr's Part No.
1	PLAS MOUNIG- BAT PACK POCKET ABS BLK 3U2X TM832EUL ROHS	056L006982C011
2	CAB FNT CHG COBRA TM833EUL ABS BLK 3U2X CM110-008 W/DC12 ROHS	051L003473D033
3	LENS LTGD LED LENS FOR CHG TM832EUL PMMA TRANSPARENT ROHS	055L002779C020
4	CONT COM CHARGE-- TM832EUL T03 PHOSPHOR COPPER GP ROHS	061L003059C018
5	CAB REAR CHG TM832EUL ABS BLK 3U2X COBRA ROHS	052L003066C014
6	PCB DS FR4- L70.1--W45.2--T10 CHA GP TM833USL REV.3 ROHS	116L2833US-USB33
7	RATING LABEL FOR TM833EUL CHG ROHS	081L002001-012
8	CUSH RUB KE941-U 10x1.6 TE238R	089L001127-035
9	SCREW M3.0*8.0mm PB IRON	067L130086-10003

BATTERY TRAY UNIT EXPLODED VIEW

Alkaline Battery Tray

Ref.No.	Description	Mfr's Part No.
1	CUSH RUB- RING FOR BATT BLK 3U2X TM832EUL ROHS	089L003314D012
2	SPRING FOR BELT CLIP	065L376584-50004
3	SPRING BATTERY A PHOSPHORUS GP L70 D0.6 TM832EUL ROHS	065L002300-018
4	SPRING BATTERY D PHOSPHORUS GP L70D0.6 TM832EUL ROHS	065L002298-015
5	SPRING BATTERY C PHOSPHORUS GP L70 D0.6 TM832EUL ROHS	065L002301-015
6	CAB REAR ALK BATT TM833USL COBRA ABS BLK 3U2X ROHS	052L003065E019
7	CONT +VE PLATE B TM832EUL T02 PHOSPHOR COPPER GP ROHS	061L003057C014
8	SPRING BATTERY B PHOSPHORUS GP L70 D0.6 TM832EUL ROHS	065L002309-011
9	CONT COM PLATE A TM832EUL T02 PHOSPHOR COPPER GP ROHS	061L003060D019

PART LIST

MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
	TM833EUL/MAIN/UNIT/ COBRA/EU/BLK/REV.0	A29P1030201L0004
	TM832EUL/BACK HSG/E-M COMP/ COBRA/EU/BLK/REV.0	A28P2730102L0001
22	CONNECTOR AT -RECEP 62 CU TM832EUL ROHS	004L990019-01007
	WIRE-UL1007 01*01P 068MM AWG24 RED (3+3) ROHS	025L506832-20007
25	MOTOR YONGLIANXING 1011FE-12TX 3.0V 250MA W/WIRE L=53MM ROHS	027L100030-11010
21	PLAS CLIP---- ATTACHMENT PC BLK 3U2X TM832EUL ROHS	056L006981D010
	PLAS BRACKET BAT ABS+CU+GP POGO PIN CONN TM832EUL ROHS	056L007034C018
23	METAL PALTE--- CONTECTOR T03 BS NI L12 NV366	063L003684-013
26	METAL PLATE----- T05 TIN PLATE MOTOR MOUNT ROHS	063L003947C017
17	METAL HOUSIN--- ALA TM832EUL DIE CASE ROHS	063L004024D019
24	SCREW MS M2.0L04 PH W + FL MS NI ROHS	070L142004-31104
27	SCREW M2.6*5MM PM S/S	071L126053-50008
20	SCREW MS M3.0L09 PH - + FL S/S BLK ROHS	071L130093-50001
	O-RING OD6.5*ID4.5*W1.0 SIL BK TM832EUL ROHS	100L001225-012
	TM832EUL/OTHER CASING/E-M COMP COBRA/EU/BLK/REV.0	A28P2730103L0007
34	KEY VOL- TM832EUL ABS BLK 3U2X ROHS	054L004483D013
33	KEY SQ-- TM832EUL ABS BLK 3U2X ROHS	054L004484E016
36	KEY CAP- MIC TM832EUL ABS BLK 3U2X ROHS	054L004485C011
15	PLAS LATCH -- PC BLK 3U2X TM832EUL ROHS	056L006976D017
5	PLAS PLATE-- KEYBOARD MOUNT PMMA TM832EUL ROHS	056L006977D014
16	METAL LOCK PIN-- T01 S/S TM883USL ROHS	063L003951-011
32	VOL NUT M7*2.0mm (CU)	064L570200-30009
37	ANTENNA NUT 1/4"9.0*1.8mm (CU)	064L590181-30005
	NUT RD- M7.0 P0.75 CU NI VOL TM832EUL(SEND TO VENDOR)ROHS	064L975531-01008
19	SCREW TS D2.6L10 PH - + FL S/S ROHS	067L352610-00200
12	SCREW MS M2.0L05 PH - + FL S/S ROHS	071L120053-50006
18	CUSH SILI SCREW SLEEVE ID:18*DIA:0.8MM DC31M3G ROHS	089L002986-018
14	CUSH RUB- RING FOR UNIT BLK 3U2X TM832EUL ROHS	089L003315C013
35	CUSH RUB- JACK CONN GREY DS 022 TM832EUL ROHS	089L003316C010
	TM832EUL/ANT/E-M COMP/ COBRA/EU/BLK/REV.0	A28P2730104L0003
	PLAS SLEEVE- ANT PU BLK 3U2X TM832EUL ROHS	056L006979D018
13	PLAS CAP---- ANT ABS BLK 3U2X TM832EUL ROHS	056L007041C015
	METAL ANT HEAD-- 62CU GP ROHS	063L003271-00006
	SPRING ANTENNA-- SPRING STEEL RED Cu L123D10 TM832EUL ROHS	065L002290-019
	TM833EUL/MAIN/PCBA/ COBRA/EU/BLK/REV.0	A29P2030201L0008
30	RUBCON YP- 001P L30.1W2.0H5.2 ROHS	011L301801-01037
9	LCD TNG- TSF L37.0-W38.0T1.8 P 1/4 5.0V 6 O'CLOCK ROHS	014L019708-10005
10	LENS MAIN LCD BACK LIGHT PLATE PMMA TM832EUL ROHS	055L002778C019
8	METAL PLATE----- T03 S/S LCD MOUNTING TM832EUL ROHS	063L003946C010
29	INLAY KEY- SUS304+ADHESIVE TM833USL UNIT COBRA ROHS	076L002624-018

PART LIST-CONTINUED

MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
11	INLAY KEY- SUS304+ADHESIVE TM833EUL COBRA ROHS CUSH SPON 40*4*3MM TM832 ROHS DOUBLE COATED WHITE SPONGE 9*7 *1mm TM833EUL/MAIN/SOLDERING/PCBA/ COBRA/EU/BLK/REV.0	076L002625-015 089L003426-017 089L070901-30007 A29P2130201L0001
C109	CAP-ELE 100-U/M 10-V D5H8---- ROHS	003L121071-02202
C111	CAP-ELE 22--U/M 16-V D4H5---- TRACO ROHS	003L122261-62052
C169	CAP-ELE 22--U/M 16-V D4H5---- TRACO ROHS	003L122261-62052
C170	CAP-ELE 22--U/M 16-V D4H5---- TRACO ROHS	003L122261-62052
C178	CAP-ELE 100-U/M 10-V D5H8---- ROHS	003L121071-02202
C179	CAP-ELE 100-U/M 10-V D5H8---- ROHS	003L121071-02202
C180	CAP-ELE 100-U/M 16-V D6H5 -40+105 ***	003L121071-62214
C185	CAP-ELE 10--U/M 25-V D4H5---- ROHS	003L121062-52000
C186	CAP-ELE 10--U/M 25-V D4H5---- ROHS	003L121062-52000
F3	XTAL- 21M4----- 1K6 -20+70- ZIBOFENGYUAN UM-5 ROHS	007L221425-W0003
F4	XTAL- 21M4----- 1K6 -20+70- ZIBOFENGYUAN UM-5 ROHS	007L221425-W0003
X3	XTAL- 9M828000- 60- -20+60- ROHS	007L982802-90008
X2	XTAL- 20M95---- 2.5 -30+50ROHS LC15PF VINGIN UM-1 LEAD GREEN	007LF2952C-80003
VR3	VR LIN ROT-HOR 10K- A B 25MW HT RG82BS-3A1-B103-OHBE ROHS	026L210338-90004
M2	MIC COND 2.2-KOHM D9.7H4.5 3V F9745AP422-118 -62+/-3DB RoHS METAL COVER-VCO SHIELD T03 MS NI TM882 CUSH SPON SINGLE COATED 150X5X4 089L40A505-20005 ROHS	034L54LP45-10002 063L003545-017 089L003532-018
F5	FLTR- 450K----- 7K5 -20+80 SHOULDER LTM450EW	201L545015-A0007
X1	FLTR- 450K----- +/-4K -20+60 SHOULDER CDB450C24 TM832EUL/MAIN/TOP/SMD/PCBA/ COBRA/EU/BLK/REV.0	201L6B450D-B0008 A28P4030101L0002
C14	CAP-CSM 30--P/J 50-V 0603--COG MURATA GRM1885C1H300JA01D ROHS	003L883005-05567
C31	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C33	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C35	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C36	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C37	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C40	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C41	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C113	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C114	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C115	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C117	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C120	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C129	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C137	CAP-CSM 33--N/K 16-V 0402--X7R EYANG ROHS	003L213331-613H5
C139	CAP-CSM 33--N/K 16-V 0402--X7R EYANG ROHS	003L213331-613H5
C141	CAP-CSM 220-P/J 50-V 0402-COG MURAT GMR155C1H221JA01D	003L882215-05369

PART LIST-CONTINUED

MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
C142	CAP-CSM 220-P/J 50-V 0402-COG MURAT GMR155C1H221JA01D	003L882215-05369
C166	CAP-CSM 47--N/K 25-V 0402--X7R EYANG	003L214732-513H3
C168	CAP TC- 2.2-U/M 16-V 1206----- *** ROHS	664L622534-30005
C176	CAP-CSM 22--P/J 50-V 0402--NPO ***	003L152205-05302
C177	CAP-CSM 22--P/J 50-V 0402--NPO ***	003L152205-05302
C203	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
U7	M-IC M38C29FFAHP60K- FLAH64P6Q -ARENESAS ROHS	005LM38C29-10J07
U9	M-IC AT24C16BN-SH-T- EEPR ATMEL SOIC-8 ROHS	005L2416AN-10004
D3	LED SMD-- ORG 2V1- 3216 JOYWOW JW-CS-1204O1-JC ROHS	015L000302-10004
D4	LED SMD-- ORG 2V1- 3216 JOYWOW JW-CS-1204O1-JC ROHS	015L000302-10004
D5	LED SMD-- ORG 2V1- 0603 KINGBRIGHT KPT-1608SECK	015L000375-10025
D6	LED SMD-- ORG 2V1- 0603 KINGBRIGHT KPT-1608SECK	015L000375-10025
D7	LED SMD-- ORG 2V1- 0603 KINGBRIGHT KPT-1608SECK	015L000375-10025
D8	LED SMD-- ORG 2V1- 0603 KINGBRIGHT KPT-1608SECK	015L000375-10025
R9	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R23	RES TFC 47---OHM 1/16W J 0402- *** 200	021L647099-10122
R59	RES-CF- 100--OHM 1/16W J 0402- 200PPM ASJ CR10-101-JT	021L210009-10224
R61	RES-CF- 100--OHM 1/16W J 0402- 200PPM ASJ CR10-101-JT	021L210009-10224
R62	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R63	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R77	RES-TFC 3.3K-OHM 1/16W J 0402- *** 200	021L633019-10127
R79	RES-TFC 2.2K-OHM 1/16W J 0402- *** 200	021L622019-10122
R86	RES-TFC 2.2K-OHM 1/16W J 0402- *** 200	021L622019-10122
R87	RES-TFC 2.2K-OHM 1/16W J 0402- *** 200	021L622019-10122
R89	RES-TFC 3.3K-OHM 1/16W J 0402- *** 200	021L633019-10127
R90	RES TFC 300K-OHM 1/16W J 0402- *** 200	021L630039-10127
R91	RES-TFC 120K-OHM 1/16W J 0402- *** 200	021L612039-10125
R92	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R93	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R94	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R122	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R123	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R134	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R150	RES TFC 20K--OHM 1/16W J 0402- *** 200 ROHS	021L620029-10126
R151	RES TFC 20K--OHM 1/16W J 0402- *** 200 ROHS	021L620029-10126
R152	RES TFC 20K--OHM 1/16W J 0402- *** 200 ROHS	021L620029-10126
R153	RES TFC 20K--OHM 1/16W J 0402- *** 200 ROHS	021L620029-10126
R154	RES TFC 20K--OHM 1/16W J 0402- *** 200 ROHS	021L620029-10126
R156	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R157	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R158	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220

PART LIST-CONTINUED

MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
R159	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R162	RES-TFC 22K--OHM 1/16W J 0402- *** 200	021L622029-10120
R163	RES-TFC 22K--OHM 1/16W J 0402- *** 200	021L622029-10120
R170	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R174	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R182	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R183	RES-TFC 220--OHM 1/16W J 0402- *** 200	021L622009-10124
R184	RES-CF- 5.6K-OHM 1/16W J 0402- 200PPM	021L256019-10226
R185	RES-CF- 5.6K-OHM 1/16W J 0402- 200PPM	021L256019-10226
R187	RES-CF- 12--KOHM 1/16W J 0402-	021L212029-10224
R188	RES-CF- 12--KOHM 1/16W J 0402-	021L212029-10224
R189	RES-TFC 68K--OHM 1/16W J 0402- *** 200	021L668029-10124
R190	RES-TFC 68K--OHM 1/16W J 0402- *** 200	021L668029-10124
R194	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R195	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R196	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R197	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R304	RES-TFC 0----OHM 1/16W J 0402- *** 200	021L600009-10124
Q9	TRS BJP SS SOT-23 MMBT3906LT1 ROHS	023L233906-00001
Q26	TRS BJP SS SOT-23 MMBT3906LT1 ROHS	023L233906-00001
VC1	CAP-TRM 03-10PF +50-0% PANASONIC ECRKN010C61X ROHS	024L910095-60009
VR1	VR LIN TRIMMER 10K- B - 0.15W PANASONIC EVM3YSX50B14 +/-25%	026LA10311-70009
VR2	VR LIN TRIMMER 50K- B - 0.15W PANASONIC EVM3YSX50B54 +/-25%	026LA50311-70001
J1	HEADER-- 2*4PINS FEMALE 1.27MM SMD 6206-008-G1-0	032L386426-60008
28	PCB 4L FR4- L112.5W57--T10- V4 MAIN TM832EUL L2-3:0.2MM ROHS	116L4832EU-56B42
	TM832EUL/PTT/SMD/PCBA/ COBRA/EU/BLK/REV.0	A28P4030126L0006
	SWITCH TACT 1P2T 250M SMD ROHS SUN RISE TM1103R25W-2500-TR	022L041103-R25W8
	PCB DS FR4- L33---W8---T10- PTT REV.2 TM832USL ROHS	116L2832EU-USF28
	TM833EUL/LCD-BONDING/PCBA/ COBRA/EU/BLK/REV.0	A29P3030201L0002
U401	C-LCD HT1621-DICE----- LCDD HOLTEK	005LHT1621-10005
U402	C-IC ISD1730X----- COD- DIE- --WINBOND SMD ROHS	005L1730X0-82509
	TM833EUL/LCD/SMD/PCBA/ COBRA/EU/BLK/REV.0	A29P4030129L0000
C401	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C402	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C403	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C404	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C405	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C406	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C407	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C408	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C409	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388

PART LIST-CONTINUED

MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
R401	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R402	RES-CF- 100--OHM 1/16W J 0402- 200PPM ASJ CR10-101-JT	021L210009-10224
R403	RES TFC 47---OHM 1/16W J 0402- *** 200	021L647099-10122
R406	RES TFC 62K--OHM 1/16W F 0402- *** 200 ROHS	021L662021-10126
R407	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
	PCB 2L FR4- L32---W20---T10 V3 LCD GP TM833USL ROHS	116L2833US-56D33
	TM833EUL/MAIN/BTM/SMD/PCBA/ COBRA/EU/BLK/REV.0	A29P4030214L0001
C1	CAP-CSM 18--P/J 50-V 0603--NPO *** ROHS	003L151805-05564
C2	CAP-CSM 18--P/J 50-V 0402-COG MURATA	003L881805-05365
C3	CAP-CSM 18--P/J 50-V 0402-COG MURATA	003L881805-05365
C4	CAP-CSM 10--P/J 50-V 0603-NPO *** GRM1885C1H100JA01D	003L510060-10009
C5	CAP-CSM 10--P/J 50-V 0603-NPO *** GRM1885C1H100JA01D	003L510060-10009
C6	CAP-CSM 10--P/J 50-V 0402-NPO- MURATA GRM1555C1H100JZ01D ROHS	003L51006B-60000
C7	CAP-CSM 10--P/J 50-V 0402-NPO- MURATA GRM1555C1H100JZ01D ROHS	003L51006B-60000
C8	CAP-CSM 10--P/J 50-V 0402-NPO- MURATA GRM1555C1H100JZ01D ROHS	003L51006B-60000
C9	CAP-CSM 10--P/J 50-V 0402-NPO- MURATA GRM1555C1H100JZ01D ROHS	003L51006B-60000
C10	CAP-CSM 10--P/J 50-V 0402-NPO- MURATA GRM1555C1H100JZ01D ROHS	003L51006B-60000
C11	CAP-CSM 10--P/J 50-V 0402-NPO- MURATA GRM1555C1H100JZ01D ROHS	003L51006B-60000
C12	CAP-CSM 33--P/J 50-V 0603--NPO ***	003L153305-05563
C13	CAP-CSM 100-P/J 50-V 0402--COG MURATA	003L881015-05365
C15	CHIP CAP 1608 47PF 50V +/-5% NPO	003L547063-10003
C16	CHIP CAP 1608 47PF 50V +/-5% NPO	003L547063-10003
C17	CAP-CSM 47--P/J 50-V 0402--COG MURATA	003L884705-05360
C18	CAP-CSM 47--P/J 50-V 0402--COG MURATA	003L884705-05360
C19	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C20	CAP-CSM 1---N/K 50-V 0603--X7R MURATA	003L211025-01568
C21	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C22	CAP-CSM 1---N/K 50-V 0603--X7R MURATA	003L211025-01568
C23	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C24	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C25	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C26	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C27	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C28	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C29	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C30	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C32	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C34	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C38	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C39	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C42	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360

PART LIST-CONTINUED

MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
C43	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C44	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C45	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C46	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C47	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C48	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C49	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C50	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C51	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C52	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C53	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C54	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C55	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C56	CAP-CSM 1---U/Z 6.3V 0402--Y5V MURATA GRM155F50J105Z ROHS	003L201050-68366
C57	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C58	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C59	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C60	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C61	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C62	CAP-CSM 12--P/J 50-V 0603--COG MURATA	003L881205-05565
C63	CAP-CSM 12--P/J 50-V 0603--COG MURATA	003L881205-05565
C64	CAP-CSM 12--P/J 50-V 0402-COG- MURATA GMR155C1H120JZ01D ROHS	003L881205-05369
C66	CAP-CSM 22--P/J 50-V 0603--NPO *** ROHS	003L152205-05560
C67	CAP-CSM 18--P/J 50-V 0603--COG MURATA GRM1885C1H180J	003L881805-05561
C68	CAP-CSM 22--P/J 50-V 0402--NPO ***	003L152205-05302
C69	CAP-CSM 22--P/J 50-V 0402--NPO ***	003L152205-05302
C70	CAP-CSM 68--P/J 50-V 0603--NPO ***	003L156805-05564
C71	CAP-CSM 82--P/J 50-V 0402--COG MURATA GRM1555C1H820J	003L888205-05363
C72	CAP-CSM 22--P/J 50-V 0603--NPO *** ROHS	003L152205-05560
C73	CAP-CSM 8---P/D 50-V 0402--COG ***	003L888095-03365
C74	CAP-CSM 8---P/D 50-V 0402--COG ***	003L888095-03365
C75	CAP TC- 2.2-U/M 16-V 1206----- *** ROHS	664L622534-30005
C76	CAP TC- 2.2-U/M 16-V 1206----- *** ROHS	664L622534-30005
C77	CAP-CSM 33--P/J 50-V 0603--NPO ***	003L153305-05563
C78	CAP-CSM 9---P/D 50-V 0402-COG MURAT GMR155C1H9R0DZ01D	003L889095-03367
C79	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C80	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C81	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C82	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C83	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C84	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364

PART LIST-CONTINUED

MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
C85	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C86	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C87	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C88	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C89	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C90	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C91	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C92	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C93	CAP-CSM 470-P/J 50-V 0402-COG MURATA GMR155C1H471JA01D	003L884715-05368
C94	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C95	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C96	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C97	CAP-CSM 470-P/J 50-V 0402-COG MURATA GMR155C1H471JA01D	003L884715-05368
C98	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C99	CAP-CSM 470-P/J 50-V 0402-COG MURATA GMR155C1H471JA01D	003L884715-05368
C100	CAP-CSM 470-P/J 50-V 0402-COG MURATA GMR155C1H471JA01D	003L884715-05368
C101	CAP-CSM 470-P/J 50-V 0402-COG MURATA GMR155C1H471JA01D	003L884715-05368
C102	CAP-CSM 470-P/J 50-V 0402-COG MURATA GMR155C1H471JA01D	003L884715-05368
C103	CAP-CSM 470-P/J 50-V 0402-COG MURATA GMR155C1H471JA01D	003L884715-05368
C104	CAP-CSM 1.5-P/C 50-V 0402-COG MURATA GRM155C1H1R5CZ01D	003L881595-06368
C105	CAP-CSM 100-P/J 50-V 0402--COG MURATA	003L881015-05365
C106	CAP-CSM 100-P/J 50-V 0402--COG MURATA	003L881015-05365
C107	CAP-CSM 100-P/J 50-V 0402--COG MURATA	003L881015-05365
C108	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C110	CAP-CSM 2---P/C 50-V 0402-COG- MURATA GRM1555C1H2R0CZ01D	003L882095-06365
C112	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C116	CAP-CSM 220-N/Z 16-V 0402--Y5V MURATA	003L202241-08369
C118	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C119	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C121	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C122	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C123	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C124	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C125	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C126	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C127	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C128	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C130	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C131	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C132	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C133	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360

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MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
C134	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C135	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C136	CAP-CSM 1---U/Z 6.3V 0402--Y5V MURATA GRM155F50J105Z ROHS	003L201050-68366
C138	CAP-CSM 33--N/K 16-V 0402--X7R EYANG ROHS	003L213331-613H5
C140	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C143	CAP-CSM 220-P/J 50-V 0402-COG MURAT GMR155C1H221JA01D	003L882215-05369
C144	CAP-CSM 220-P/J 50-V 0402-COG MURAT GMR155C1H221JA01D	003L882215-05369
C145	CAP-CSM 220-P/J 50-V 0402-COG MURAT GMR155C1H221JA01D	003L882215-05369
C146	CAP-CSM 820-P/J 50-V 0402--COG EYANG	003L888215-053H7
C147	CAP-CSM 56--P/J 50-V 0603--UJ- *** ROHS	003LC5606E-10006
C148	CAP-SCM 4700P/K 50-V 0402-X7R MURATA GMR155R71H472KA01D ROHS	003L214725-01365
C149	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C150	CAP-SCM 4700P/K 50-V 0402-X7R MURATA GMR155R71H472KA01D ROHS	003L214725-01365
C151	CAP-CSM 470-P/J 50-V 0402-COG MURATA GMR155C1H471JA01D	003L884715-05368
C152	CAP-CSM 15--P/J 50-V 0402-COG- MURATA	003L881505-05362
C153	CAP-CSM 1.8-N/K 50-V 0402--X7R MURATA	003L211825-01360
C154	CAP-CSM 2.2-N/K 50-V 0402--X7R MURATA GRM155R71H222K ROHS	003L212225-01366
C155	CAP-CSM 390-P/J 50-V 0402--COG MURATA GRM1555C1H391J	003L883915-05368
C156	CAP-CSM 180-P/J 50-V 0402--COG MURATA GRM36COG181J50 ROHS	003L881815-05363
C157	CAP-CSM 3---P/C 50-V 0402--COG ***	003L883095-06367
C158	CAP-CSM 5---P/C 50-V 0402--COG ***	003L885095-06361
C159	CAP-CSM 5---P/C 50-V 0402--COG ***	003L885095-06361
C160	CAP-CSM 1---P/C 50-V 0402-COG MURATA GRM155C1H1R0CZ01D	003L881095-06363
C161	CAP-CSM 1---P/C 50-V 0402-COG MURATA GRM155C1H1R0CZ01D	003L881095-06363
C162	CAP-CSM 3.3-N/K 50-V 0402-X7R MURAT GRM155R71H332KA01D	003L213325-01369
C163	CAP-CSM 3.3-N/K 50-V 0402-X7R MURAT GRM155R71H332KA01D	003L213325-01369
C164	CAP-CSM 3.3-N/K 50-V 0402-X7R MURAT GRM155R71H332KA01D	003L213325-01369
C165	CAP-CSM 47--N/K 25-V 0402--X7R MURATA	003L214732-51367
C167	CAP-CSM 47--N/K 25-V 0402--X7R MURATA	003L214732-51367
C171	CAP-CSM 1---U/Z 6.3V 0402--Y5V MURATA GRM155F50J105Z ROHS	003L201050-68366
C172	CAP-CSM 1---U/Z 6.3V 0402--Y5V MURATA GRM155F50J105Z ROHS	003L201050-68366
C173	CAP-CSM 1---U/Z 6.3V 0402--Y5V MURATA GRM155F50J105Z ROHS	003L201050-68366
C174	CAP-CSM 22--P/G 50-V 0603-NPO ***	003L522061-10003
C175	CAP-CSM 8---P/D 50-V 0402--COG ***	003L888095-03365
C181	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C182	CAP-CSM 330-P/J 50-V 0402--COG MURATA	003L883315-06366
C183	CAP-CSM 6800P/K 50-V 0402--X7R EYANG ROHS	003L216825-013H6
C184	CAP-CSM 680-P/K 50-V 0402--X7R MURATA GRM155R71H681K ROHS	003L216815-01362
C187	CAP-CSM 15--N/K 25-V 0402--X7R EYANG ROHS	003L211532-513H5
C188	CAP-CSM 15--N/K 25-V 0402--X7R EYANG ROHS	003L211532-513H5
C189	CAP-CSM 470-N/Z 10-V 0402--Y5V ***	003L204741-08368

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MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
C190	CAP-CSM 22--N/K 16-V 0402-X7R ***	003L212231-61366
C191	CAP-CSM 1---U/Z 6.3V 0402--Y5V MURATA GRM155F50J105Z ROHS	003L201050-68366
C192	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C193	CAP-CSM 100-N/K 16-V 0402-X7R ***	003L211041-61360
C194	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C195	CAP-CSM 10--N/K 25-V 0402--X7R MURATA ROHS	003L211032-51364
C196	CAP-CSM 1---U/Z 6.3V 0402--Y5V MURATA GRM155F50J105Z ROHS	003L201050-68366
C197	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C198	CAP-CSM 2---P/C 50-V 0402-COG- MURATA GRM1555C1H2R0CZ01D	003L882095-06365
C200	CAP-CSM 10--P/J 50-V 0603-NPO *** GRM1885C1H100JA01D	003L510060-10009
C201	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
C202	CAP-CSM 1000P/K 10-V 0402--X7R ***	003L211021-01388
U1	O-IC BA4116FV----- FM---ROHM SSOP-B16 ROHS	005L4116FV-10009
U2	O-IC NJM2904M---- AMP- DMP8--J RC ROHS	005L2904M0-10001
U3	O-IC XC61FC4012MR--- CMOS SOT- 23TOREX ROHS	005L614012-M0007
U4	O-IC S324----- OPA- SOP- 14AUK S324 ROHS	005L00S324-12902
U5	O-IC S324----- OPA- SOP- 14AUK S324 ROHS	005L00S324-12902
U6	O-IC SIT8825B01-R090 DPLL SAMSUNG 16-TSSOP-0044 ROHS	005L8825B0-10009
U8	O-IC XC6204B502MR--- REG- TOREX SOT-25 ROHS	005L620450-20009
U10	C-IC 74HC4053PW----- CMOS PHILIPS SSOP16 ROHS	005L744053-10009
U11	A-IC NJM2070M-TE-#ZZZB AMP- JRC DMP8 ROHS	005L020700-10003
L1	COIL-AIR SMD 4-T*D2.0*0.5MM(-) ZHENGLONG ROHS	006L340203-B0008
L2	COIL-AIR SMD 4-T*D2.0*0.5MM(-) ZHENGLONG ROHS	006L340203-B0008
L3	COIL-AIR SMD 4-T*D2.0*0.5MM(-) ZHENGLONG ROHS	006L340203-B0008
L4	INDUCTOR- 1----UH K 0.6R 0603 SUNLORD SDFL1608Q1R0KT ROHS	006LA10502-60001
L5	INDUCTOR- 56---NH G 2520 0.18R SAGAMI C2520C-56NG ROHS	006L856104-30004
L6	COIL-AIR D1.6*3T*0.35MM SMD(-)	006L330166-F0003
L7	INDUCTOR- 56---NH G 2520 0.18R SAGAMI C2520C-56NG ROHS	006L856104-30004
L8	COIL-FM- 3TXD2.0X0.5MM SMD INWARD(-) ROHS	006L330203-B0005
L9	INDUCTOR ----0.1-UH J 1608 SMD SUNLORD SDCL1608CR10JT	006LB10401-60007
L10	INDUCTOR ----0.1-UH J 1608 SMD SUNLORD SDCL1608CR10JT	006LB10401-60007
L11	INDUCTOR ----0.1-UH J 1608 SMD SUNLORD SDCL1608CR10JT	006LB10401-60007
L12	INDUCTOR ----0.1-UH J 1608 SMD SUNLORD SDCL1608CR10JT	006LB10401-60007
L13	INDUCTOR ----0.1-UH J 1608 SMD SUNLORD SDCL1608CR10JT	006LB10401-60007
L14	INDUCTOR ----0.1-UH J 1608 SMD SUNLORD SDCL1608CR10JT	006LB10401-60007
L15	CHOKE--- 47----NH J 0.95R 0603 MATSUSHITA ELJRE47NJF2	006L847100-60000
L16	CHOKE--- 47----NH J 0.95R 0603 MATSUSHITA ELJRE47NJF2	006L847100-60000
L17	CHOKE--- 2.2---UH J 1.55R 2520 TDK NLV25T-2R2J-PF	006L822503-50004
L18	CHOKE--- 2.2---UH J 1.55R 2520 TDK NLV25T-2R2J-PF	006L822503-50004
L19	CHOKE--- 2.2---UH J 1.55R 2520 TDK NLV25T-2R2J-PF	006L822503-50004
L20	CHOKE--- 2.2---UH J 1.55R 2520 TDK NLV25T-2R2J-PF	006L822503-50004

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MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
L21	CHOKE--- 2.2---UH J 1.55R 2520 TDK NLV25T-2R2J-PF	006L822503-50004
L22	COIL-AIR SMD 6-T*D3.0*0.5MM(-) ZHENGLONG ROHS	006L360303-B0005
L23	COIL-AIR SMD 5-T*D3.0*0.5MM(-) ZHENGLONG ROHS	006L350303-B0002
L24	INDUCTOR ----0.1-UH J 1608 SMD SUNLORD SDCL1608CR10JT	006LB10401-60007
L25	INDUCTOR ----0.1-UH J 1608 SMD SUNLORD SDCL1608CR10JT	006LB10401-60007
L26	INDUCTOR 4.7--NH J 0603 SMD SUNLORD SDCL1608C4N7ST	006LB4720A-60000
L27	INDUCTOR ----0.1-UH J 1608 SMD SUNLORD SDCL1608CR10JT	006LB10401-60007
L28	INDUCTOR 22----NH J 0.40R 0603 SG SGH1608H22NJB	006LB22101-60001
D1	DIODE SW- 35-V 100M USM--- ROHM 1SS356 ROHS	010L223560-10000
D2	DIODE SW- 35-V 100M USM--- ROHM 1SS356 ROHS	010L223560-10000
D9	DIODE SW- 35-V 150MW SOT416 ROHM DAN235E	010L22235E-70005
D10	DIODE VAR 30-V 10NA HVU307 TOSHIBA 1SV217	010L250217-10009
D11	DIODE VAR 30-V 10NA HVU307 TOSHIBA 1SV217	010L250217-10009
D12	DIODE VAR 30-V 10NA HVU307 TOSHIBA 1SV217	010L250217-10009
D13	DIODE SCK 30-V 150M UFP--- RENESAS HSC278TRF-E	010L220278-00000
D14	DIODE SW- 80-V 100M SOT-23 KEC KDS226	010L220226-90001
D15	DIODE SW- 80-V 100M SOT-23 KEC KDS226	010L220226-90001
D16	DIODE SW- 85-V 450M SOT-23 PHILIPS BAW56	010L22BAW5-60006
D17	DIODE SW- 85-V 450M SOT-23 PHILIPS BAW56	010L22BAW5-60006
D18	DIODE ZNR 5.1V 5-MA SC-76- ROHM UDZS 5.1B ROHS	010L21051B-04008
J2	JACK STER F VERT D2.6 SMD TG-2866D-PA6T-G ROHS	019L322256-01006
R1	RES-TFC 220--OHM 1/16W J 0402- *** 200	021L622009-10124
R2	RES-TFC 220--OHM 1/16W J 0402- *** 200	021L622009-10124
R3	RES-TFC 220--OHM 1/16W J 0402- *** 200	021L622009-10124
R4	RES-TFC 220--OHM 1/16W J 0402- *** 200	021L622009-10124
R5	RES-TFC 220--OHM 1/16W J 0402- *** 200	021L622009-10124
R6	RES-TFC 220--OHM 1/16W J 0402- *** 200	021L622009-10124
R7	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R8	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R10	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R11	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R12	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R13	RES-TFC 3.3K-OHM 1/16W J 0402- *** 200	021L633019-10127
R14	RES-TFC 3.3K-OHM 1/16W J 0402- *** 200	021L633019-10127
R15	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R16	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R17	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R18	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R19	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R20	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R21	RES TFC 22---OHM 1/16W J 0402- *** 200	021L622009-10126

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MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
R22	RES TFC 47---OHM 1/16W J 0402- *** 200	021L647099-10122
R24	RES TFC 47---OHM 1/16W J 0402- *** 200	021L647099-10122
R25	RES-TFC 2.2K-OHM 1/16W J 0402- *** 200	021L622019-10122
R26	RES-TFC 560K-OHM 1/16W J 0402- *** 200	021L656039-10125
R27	CHIP RES 1608 3.3 OHM 1/10W +/-5%	021L503373-10006
R28	CHIP RES 1608 3.3 OHM 1/10W +/-5%	021L503373-10006
R29	RES-TFC 33K--OHM 1/16W J 0402- *** 200	021L633029-10125
R30	RES TFC 36K--OHM 1/16W J 0402- *** 200	021L636029-10121
R31	RES-TFC 3.3K-OHM 1/16W J 0402- *** 200	021L633019-10127
R32	RES-CF- 8.2K-OHM 1/16W J 0402- 200PPM	021L282019-10227
R33	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R34	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R35	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R36	RES-TFC 100K-OHM 1/16W F 0402- *** 200	021L610031-10125
R37	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R38	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R39	RES TFC 330K-OHM 1/16W J 0402- *** 200	021L633039-10123
R40	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R41	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R42	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R43	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R44	RES TFC 150--OHM 1/16W J 0402- *** 200	021L615009-10127
R45	RES TFC 150--OHM 1/16W J 0402- *** 200	021L615009-10127
R46	RES TFC 56---OHM 1/16W J 0402- *** 200	021L656099-10123
R47	RES-TFC 100--OHM 1/16W F 0603- ***	021L610001-15121
R48	RES-TFC 15K--OHM 1/16W J 0402- *** 200	021L615029-10123
R49	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R50	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R51	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R52	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R53	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R54	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R55	RES-TFC 330--OHM 1/16W J 0402- *** 200	021L633009-10129
R56	RES-TFC 56K--OHM 1/16W J 0402- *** 200	021L656029-10127
R57	RES-TFC 56K--OHM 1/16W J 0402- *** 200	021L656029-10127
R58	RES-TFC 56K--OHM 1/16W J 0402- *** 200	021L656029-10127
R60	RES-CF- 100--OHM 1/16W J 0402- 200PPM ASJ CR10-101-JT	021L210009-10224
R64	RES TFC 820--OHM 1/16W J 0402- *** 200 ROHS	021L682009-10122
R65	RES-CF- 100--OHM 1/16W J 0402- 200PPM ASJ CR10-101-JT	021L210009-10224
R66	RES-TFC 100--OHM 1/16W F 0603- ***	021L610001-15121
R67	RES-TFC 100--OHM 1/16W F 0603- ***	021L610001-15121

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MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
R68	RES-TFC 100--OHM 1/16W F 0603- ***	021L610001-15121
R69	RES-TFC 560K-OHM 1/16W J 0402- *** 200	021L656039-10125
R70	RES TFC 56---OHM 1/16W J 0402- *** 200	021L656099-10123
R71	RES-CF- 100--OHM 1/16W J 0402- 200PPM ASJ CR10-101-JT	021L210009-10224
R72	RES TFC 56---OHM 1/16W J 0402- *** 200	021L656099-10123
R73	RES TFC 56---OHM 1/16W J 0402- *** 200	021L656099-10123
R74	RES-TFC 150K-OHM 1/16W J 0402- *** 200	021L615039-10121
R75	RES-TFC 150K-OHM 1/16W J 0402- *** 200	021L615039-10121
R76	RES-TFC 3.3K-OHM 1/16W J 0402- *** 200	021L633019-10127
R78	RES-TFC 100K-OHM 1/16W F 0402- *** 200	021L610031-10125
R80	RES TFC 20K--OHM 1/16W F 0402- *** 100	021L520361-70004
R81	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
R82	RES-TFC 2.2K-OHM 1/16W J 0402- *** 200	021L622019-10122
R83	RES-TFC 2.2K-OHM 1/16W J 0402- *** 200	021L622019-10122
R84	RES-TFC 15K--OHM 1/16W J 0402- *** 200	021L615029-10123
R85	RES-TFC 2.2K-OHM 1/16W J 0402- *** 200	021L622019-10122
R88	RES-TFC 1.5K-OHM 1/16W J 0402- *** 200	021L615019-10125
R95	CHIP RES 1608 3.3 OHM 1/10W +/-5%	021L503373-10006
R96	RES-TFC 100K-OHM 1/16W F 0402- *** 200	021L610031-10125
R97	RES-TFC 47K--OHM 1/16W J 0402- *** 200	021L247029-10223
R98	RES-TFC 200K-OHM 1/16W F 0402 *** ROHS	021L620031-10324
R99	RES-TFC 100K-OHM 1/16W F 0402- *** 200	021L610031-10125
R100	RES-TFC 100K-OHM 1/16W F 0402- *** 200	021L610031-10125
R101	RES-TFC 100K-OHM 1/16W F 0402- *** 200	021L610031-10125
R102	RES TFC 0.39-OHM 1/8-W J 1206- ROHS	021L6390A9-27924
R103	RES TFC 0.39-OHM 1/8-W J 1206- ROHS	021L6390A9-27924
R104	RES TFC 0.39-OHM 1/8-W J 1206- ROHS	021L6390A9-27924
R105	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R106	RES-TFC 33K--OHM 1/16W J 0402- *** 200	021L633029-10125
R107	RES-TFC 2.2K-OHM 1/16W J 0402- *** 200	021L622019-10122
R108	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R109	RES-TFC 150K-OHM 1/16W J 0402- *** 200	021L615039-10121
R110	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R111	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R112	RES-CF- 1K---OHM 1/16W J 0402- 200PPM ASJ CR10-102-JT	021L210019-10222
R113	RES-TFC 22K--OHM 1/16W J 0402- *** 200	021L622029-10120
R114	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R115	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R116	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R117	RES-TFC 3.3K-OHM 1/16W J 0402- *** 200	021L633019-10127
R118	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220

PART LIST-CONTINUED

MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
R119	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R120	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R121	RES-TFC 3.3K-OHM 1/16W J 0402- *** 200	021L633019-10127
R124	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R125	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R126	RES-TFC 2.2K-OHM 1/16W J 0402- *** 200	021L622019-10122
R127	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R128	RES-TFC 47K--OHM 1/16W J 0402- *** 200	021L247029-10223
R129	RES-TFC 47K--OHM 1/16W J 0402- *** 200	021L247029-10223
R130	RES-TFC 47K--OHM 1/16W J 0402- *** 200	021L247029-10223
R131	RES-TFC 47K--OHM 1/16W J 0402- *** 200	021L247029-10223
R132	RES-TFC 47K--OHM 1/16W J 0402- *** 200	021L247029-10223
R133	RES-TFC 47K--OHM 1/16W J 0402- *** 200	021L247029-10223
R135	RES-TFC 47K--OHM 1/16W J 0402- *** 200	021L247029-10223
R136	RES-CF- 1M---OHM 1/16W J 0402- 200PPM ASJ CR10-105-JT	021L210049-10226
R137	RES-TFC 68K--OHM 1/16W J 0402- *** 200	021L668029-10124
R138	RES-TFC 560K-OHM 1/16W J 0402- *** 200	021L656039-10125
R139	RES-TFC 820K-OHM 1/16W J 0402- *** 200	021L682039-10126
R140	RES TFC 36K--OHM 1/16W J 0402- *** 200	021L636029-10121
R141	RES-TFC 56K--OHM 1/16W J 0402- *** 200	021L656029-10127
R142	RES-TFC 56K--OHM 1/16W J 0402- *** 200	021L656029-10127
R143	RES-TFC 15K--OHM 1/16W J 0402- *** 200	021L615029-10123
R144	RES-TFC 39K--OHM 1/16W J 0402- *** 200	021L639029-10127
R145	RES TFC 18K--OHM 1/16W J 0402- *** 200	021L618029-10129
R146	RES TFC 18K--OHM 1/16W J 0402- *** 200	021L618029-10129
R147	RES-CF- 4.7--OHM 1/16W J 0402- 200PPM ASJ CR10-4R7-JT	021L247089-10221
R148	RES-TFC 200K-OHM 1/16W F 0402 *** ROHS	021L620031-10324
R149	RES-TFC 100K-OHM 1/16W F 0402- *** 200	021L610031-10125
R155	RES TFC 20K--OHM 1/16W F 0402- *** 100	021L520361-70004
R160	RES TFC 36K--OHM 1/16W J 0402- *** 200	021L636029-10121
R161	RES TFC 36K--OHM 1/16W J 0402- *** 200	021L636029-10121
R164	RES-CF- 22K--OHM 1/16W F 0402- 200PPM ASJ CR10-223-JT	021L222029-10227
R165	RES TFC 22---OHM 1/16W J 0402- *** 200	021L622099-10126
R166	RES-TFC 33K--OHM 1/16W J 0402- *** 200	021L633029-10125
R167	RES-TFC 33K--OHM 1/16W J 0402- *** 200	021L633029-10125
R168	RES TFC 820--OHM 1/16W J 0402- *** 200 ROHS	021L682009-10122
R169	CHIP VARISTOR 1608 18V 80PF(SD V1608A180C800NPT) .	026LGSD188-10008
R171	RES TFC 43K--OHM 1/16W J 0402- *** 200	021L643029-10128
R172	RES TFC 43K--OHM 1/16W J 0402- *** 200	021L643029-10128
R173	RES-TFC 120K-OHM 1/16W J 0402- *** 200	021L612039-10125
R176	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220

PART LIST-CONTINUED

MAIN PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
R177	RES-TFC 470K-OHM 1/16W J 0402- 200PPM +/-5%	021L247039-10221
R178	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R179	RES-TFC 1.2K-OHM 1/16W J 0402- *** 200	021L612019-10129
R180	RES-CF- 100K-OHM 1/16W J 0402- 200PPM ASJ CR10-104-JT	021L210039-10228
R181	RES-CF- 1M---OHM 1/16W J 0402- 200PPM ASJ CR10-105-JT	021L210049-10226
R186	RES-CF- 5.6K-OHM 1/16W J 0402- 200PPM	021L256019-10226
R191	RES-CF- 10K--OHM 1/16W J 0402- 200PPM ASJ CR10-103-JT	021L210029-10220
R192	RES-TFC 27K--OHM 1/16W J 0402- *** 200	021L627029-10120
R193	RES TFC 10---OHM 1/16W J 0402- *** 200	021L610099-10129
R198	RES-TFC 330--OHM 1/16W J 0402- *** 200	021L633009-10129
R199	RES TFC 18K--OHM 1/16W J 0402- *** 200	021L618029-10129
R200	RES-TFC 33K--OHM 1/16W J 0402- *** 200	021L633029-10125
R201	RES-TFC 4.7K-OHM 1/16W J 0402- 200PPM ASJ CR10-472-JT	021L247019-10225
Q1	TRS BJN RF SOT23-- 2SC4901YK-- HITACHI ROHS	023L234901-30003
Q2	TRS BJN RF SOT23-- 2SC4901YK-- HITACHI ROHS	023L234901-30003
Q3	TRS BJN RF SOT23-- 2SC4901YK-- HITACHI ROHS	023L234901-30003
Q4	TRS BJN RF SOT23-- 2SC4901YK-- HITACHI ROHS	023L234901-30003
Q5	TRS BJN RF SOT23-- 2SC4901YK-- HITACHI ROHS	023L234901-30003
Q6	TRS MFN PW ----- RD07MVS1---- MITSUBISHI ROHS	023L07MVSA-30008
Q7	TRS BJN RF SOT23-- 2SC4901YK-- HITACHI ROHS	023L234901-30003
Q8	TRS MFN RF SC-82AB 3SK318 HITACHI	023L3K318A-18409
Q10	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
Q11	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
Q12	TRS MFN RF&PW SC-62- 2SK3078-- TOSHIBA	023L243078-20005
Q13	TRS MFN SS TO-236 2SK302----- TOSHIBA ROHS	023L240302-20004
Q14	TRS JFN RF SC-59- 2SK210Y----- TOSHIBA	023L240210-20007
Q15	TRS BJP SS SOT-23 MMBT3906LT1 ROHS	023L233906-00001
Q16	TRS BJP SS SOT-23 MPS8550S---- KEC ROHS	023L238550-SD000
Q17	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
Q18	TRS BJP SS SOT-23 MPS8550S---- KEC ROHS	023L238550-SD000
Q20	TRS BJN PW SC-70- 2SC4097R---- ROHM	023L234097-30008
Q21	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
Q22	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
Q23	TRS BJN PW SC-70- 2SC4097R---- ROHM	023L234097-30008
Q24	TRS BJP SS SOT-23 MMBT3906LT1 ROHS	023L233906-00001
Q25	TRS BJP SS SOT-23 MMBT3906LT1 ROHS	023L233906-00001
Q27	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
RT1	THERMISTOR NTC 100-OHM +/-3% SMD 160810H3250	030LC10108-20002
F1	FLTR- 160M---- -20+60 HDF111	201L160600-30000
F2	FLTR- 160M---- -20+60 HDF111	201L160600-30000

PART LIST-CONTINUED

ALK BATTERY ASSEMBLY

Ref.No.	Description	Mfr's Part No.
	TM833USL/ALK BATT/E-M COMP/ COBRA/US/BLK/REV.0	A29P2730105L0005
6	CAB REAR ALK BATT TM833USL COBRA ABS BLK 3U2X ROHS	052L003065E019
	INSU LABL 8B35 75.3*3.9*0.15MM TM833 ROHS	058L002967-012
7	CONT +VE PLATE B TM832EUL T02 PHOSPHOR COPPER GP ROHS	061L003057C014
9	CONT COM PLATE A TM832EUL T02 PHOSPHOR COPPER GP ROHS	061L003060D019
4	SPRING BATTERY D PHOSPHORUS GP L70D0.6 TM832EUL ROHS	065L002298-015
3	SPRING BATTERY A PHOSPHORUS GP L70 D0.6 TM832EUL ROHS	065L002300-018
5	SPRING BATTERY C PHOSPHORUS GP L70 D0.6 TM832EUL ROHS	065L002301-015
8	SPRING BATTERY B PHOSPHORUS GP L70 D0.6 TM832EUL ROHS	065L002309-011
1	CUSH RUB- RING FOR BATT BLK 3U2X TM832EUL ROHS	089L003314D012

LI-MH BATTERY ASSEMBLY

	TM833USL/LI BATT/E-M COMP/ COBRA/US/BLK/REV.0	A29P2730119L0006
	BATT LI- ----- 7.20V 1900MAH MERRY RD-0608-K02 ROHS	001L800722-00000
	CAB REAR LI BATT TM833USL COBRA ABS BLK 3U2X ROHS	052L003064C010
	DOOR BATT TM832EUL ABS BLK 3U2X ROHS	053L002180D019
	CONT COM PLATE C TM832EUL T02 PHOSPHOR COPPER GP ROHS	061L003058C011
	CONT COM CHARGE UNIT TM832EUL T02 PHOSPHOR COPPER GP ROHS	061L003061C010
	CUSH RUB- RING FOR BATT BLK 3U2X TM832EUL ROHS	089L003314D012
	CUSH SPON 40*8*1MM TM832 ROHS	089L003428-011

MAIN FRONT HOUSING ASSEMBLY

	TM833EUL/FNT HSG/E-M COMP/ COBRA/US/BLK/REV.0	A29P2730201L0009
6	SPK FLAT 8--OHM D40-H5.2 1---W TAIHEXING TEK404P-8 OHM1W ROHS	002L240145-11004
1	CAB FNT MU COBRA TM833USL ABS BLK 3U2X ROHS	051L003472C012
40	LENS MAIN TM833EUL COBRA PMMA ROHS	055L002777C026
38	PLAS PLATE-- PTT MOUNT PC BLK 3U2X TM832EUL ROHS	056L006978D011
3	INSU SHT- NYLON D37.3 TM832EUL SPEAKER FELT	058L002895C013
2	INSU WATERPROOF FILM D9.5MM ROHS	058LD95047-20006
4	KEY RUB FUN -6K MAIN TM833EUL ROHS	060L002268C031
31	KEY RUB FUN -2K LEFT TRANSLUCENT 433C TM832EUL ROHS	060L002269C010
7	KEY RUB FUN -2K RIGHT TM833USL TRANSLUCENT 433C RED 201C ROHS	060L002270C029
39	CUSH SILI PTT KEY GREY DS 022 TM832EUL ROHS	089L003359C013

CHARGER PCB ASSEMBLY

	TM833EUL/CRADLE CHG/UNIT/ COBRA/EU/BLK/REV.0	A29P1030202L0000
	TM833USL/CRADLE CHG/PCBA/ COBRA/US/BLK/REV.0	A29P2030112L0003
C201	CAP-ELE 47--U/M 16-V D6H5---- ROHS	003L124761-62207
C203	CAP-ELE 47--U/M 16-V D6H5---- ROHS	003L124761-62207
C204	CAP-ELE 47--U/M 16-V D6H5---- ROHS	003L124761-62207
C205	CAP-ELE 330-U/M 25-V D10H12.5- PANASONIC EEUFMIE331 ROHS	003L123372-52201
C206	CAP-ELE 47--U/M 16-V D6H5---- ROHS	003L124761-62207
L1	CHOKE--- 60--UH M 0.1 HONGYUAN HYC-600K-5026H-0.6-40T ROHS	006L660062-1A319
L2	CHOKE--- 120-UH M 0.1 HONGYUAN HYC-121K-6026F-0.7-50T ROHS	006L612162-1A319

PART LIST-CONTINUED

CHARGER PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
D1	DIODE IN4001	010L124001-20007
	LED RECTA R/G 2V1 L7W5H3 JOYWON JW-S25709RG2-YG ROHS	015L009950-10004
J1	JACK PWR- M HORZ D1.3 SEIKO DC-005 CHG	019L11C005-20006
R01	RES MOF 0.22-OHM 1---W J AXL-- MO-100 D4.5XL11MM ROHS	021L402289-61905
R02	RES MOF 0.1--OHM 1---W J AXL-- HK RESISTORS D4*11MM ROHS	021L200143-C0002
	TM833USL/CRADLE CHG/SMD/PCBA/ COBRA/US/BLK/REV.0	A29P4030109L0006
C101	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C102	CAP-CSM 0.01U/K 25-V 0603--X7R ROHS	003L510346-10008
C104	CAP-CSM 470-P/K 50-V 0603-X7R- *** ROHS	003L547166-10005
C105	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C106	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C107	CAP-CSM 1---N/K 50-V 0603--X7R MURATA	003L211025-01568
C109	CAP-CSM 1---U/K 10-V 0603--X5R *** ROHS	003L261050-61562
C110	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C111	CAP-CSM 100-P/J 50-V 0603--NPO ***	003L151015-05564
C112	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C114	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C115	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C116	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C117	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C118	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C119	CAP-CSM 100-P/J 50-V 0603--NPO ***	003L151015-05564
C120	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C121	CAP-CSM 100-P/J 50-V 0603--NPO ***	003L151015-05564
C122	CAP-CSM 0.1-U/K 25-V 0603--X7R	003L510446-10009
C123	CAP-CSM 470-P/K 50-V 0603-X7R- *** ROHS	003L547166-10005
C124	CAP-CSM 1---N/K 50-V 0603--X7R MURATA	003L211025-01568
U01	O-IC MC34063AD----- DDC- SOIC -8ONSEMI ROHS	005L34063A-69107
U02	O-IC S324----- OPA- SOP- 14AUK S324 ROHS	005L00S324-12902
U03	O-IC TL431IDBVR----- REG- SOT2 3-TI ROHS	005LTL431I-75911
D2	DIODE ZNR 40-V 3--A SMC ON SEMICONDUCTOR MBRS340T3G ROHS	010L441796-20003
R03	RES-TFC 1K---OHM 1/16W J 0603- *** 200	021L610019-15125
R04	RES-TFC 1K---OHM 1/16W J 0603- *** 200	021L610019-15125
R05	RES-TFC 4.7K-OHM 1/16W J 0603- *** 200	021L647019-15128
R06	RES TFC 910R-OHM 1/16W J 0603 *** 200 ROHS	021L691009-15123
R07	RES-TFC 1M---OHM 1/16W J 0603- *** 200	021L610049-15129
R08	RES TFC 18K-OHM 1/16W J 0603- *** ROHS	021L518363-10001
R09	RES-TFC 820R-OHM 1/16W J 0603- *** 200	021L682009-15122
R10	RES-TFC 1K---OHM 1/16W J 0603- *** 200	021L610019-15125
R11	RES TFC 910R-OHM 1/16W J 0603 *** 200 ROHS	021L691009-15123
R12	RES-TFC 1K---OHM 1/16W J 0603- *** 200	021L610019-15125

PART LIST-CONTINUED

CHARGER PCB ASSEMBLY

Ref.No.	Description	Mfr's Part No.
R13	RES-TFC 12K--OHM 1/16W J 0603- *** 200	021L612029-15127
R14	RES TFC 180K-OHM 1/10W J 0603- *** ROHS	021L518473-10000
R15	RES-TFC 2.2K-OHM 1/16W J 0603- *** 200	021L622019-15122
R16	RES-TFC 470R-OHM 1/16W J 0603- *** 200	021L647009-15120
R17	RES-TFC 10K--OHM 1/16W J 0603- *** 200	021L610029-15123
R18	RES-TFC 8.2K-OHM 1/16W J 0603- *** 200	021L682019-15120
R19	RES-TFC 82K--OHM 1/16W J 0603- *** 200	021L682029-15128
R20	RES TFC 2.43KOHM 1/16W F 0603- *** 200	021L624311-15123
R21	RES-TFC 2K---OHM 1/16W J 0603- *** 200	021L620019-15128
R22	RES TFC 560--OHM 1/16W J 0603- *** 200	021L656009-15121
R23	RES TFC 560--OHM 1/16W J 0603- *** 200	021L656009-15121
R24	CHIP RES 1608 0 OHM 1/10W +/-5 %	021L500073-10007
R25	RES-TFC 10K--OHM 1/16W J 0603- *** 200	021L610029-15123
R27	RES-TFC 2K---OHM 1/16W J 0603- *** 200	021L620019-15128
R28	RES-TFC 1K---OHM 1/16W J 0603- *** 200	021L610019-15125
R29	RES-TFC 82K--OHM 1/16W J 0603- *** 200	021L682029-15128
R39	RES-TFC 1K---OHM 1/16W J 0603- *** 200	021L610019-15125
Q1	TRS SIPMOS SOT-223 BSP613P SMALL-SIGNAL EDAL INFINEON	023LP613PA-67453
Q01	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
Q02	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
Q04	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
Q05	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
Q06	TRS BJN SS SOT-23 MMBT3904LT1 ROHS	023L233904-T0007
5	PCB DS FR4- L70.1--W45.2--T10 CHA GP TM833USL REV.3 ROHS	116L2833US-USB33

CHARGER ASSEMBLY

	TM833EUL/CRADLE CHG/E-M COMP/ COBRA/EU/BLK/REV.0	A29P2730210L0000
2	CAB FNT CHG COBRA TM833EUL ABS BLK 3U2X CM110-008 W/DC12 ROHS	051L003473D033
6	CAB REAR CHG TM832EUL ABS BLK 3U2X COBRA ROHS	052L003066C014
3	LENS LTGD LED LENS FOR CHG TM832EUL PMMA TRANSPARENT ROHS	055L002779C020
1	PLAS MOUNIG- BAT PACK POCKET ABS BLK 3U2X TM832EUL ROHS	056L006982C011
4	CONT COM CHARGE-- TM832EUL T03 PHOSPHOR COPPER GP ROHS	061L003059C018
9	SCREW M3.0*8.0mm PB IRON	067L130086-10003
8	CUSH RUB KE941-U 10x1.6 TE238R	089L001127-035

CHARGER PACKING MATERIAL ASSEMBLY

	TM833USL/CRADLE CHG/PKG MAT'L/ COBRA/US/BLK/REV.0	A29P1700103L0003
7	RATING LABEL FOR TM833EUL CHG ROHS	081L002001-012
	BAG PE 165*180MM FOR NC886G CHG ROHS	088L003395-019
	TM886BEUG/PKG MAT'L/CHG SCREW/ COBRA/EUR/BLACK/REV.0	886P1702300L0000
	SCREW TS D3.0L23 PH - + SH S/S ROHS	067L130235-50008
	BAG PE 40X60MM T=0.04MM ROHS	088L060040-20009

PART LIST-CONTINUED

MAIN PACKING MATERIAL ASSEMBLY

Ref.No.	Description	Mfr's Part No.
	TM833EUL/MAIN/PKG MAT'L/ COBRA/EU/BLK/REV.0	A29P1700201L0009
	RATING LABEL FOR TM833EUL UNIT ROHS	081L002000-015
	CTN OUTER B2B 345*268*220MM TM833EUL ROHS	082L003818-033
	CTN INSERT B+B 280*220 DC31M3G DRY CELL W/BAT ROHS	084L005220-017
	PUPLY TRAY TM832EUL ROHS	084L005757-029
	GIFT BOX TM833EUL ROHS	085L004135-027
	MANUAL IB TM833EUL ROHS REV.4	086L004725-049
	MANUAL ASSISTANCE SHEET TM832EUL ROHS	086L004744-016
	MANUAL TRI-FOLDER FULL LINE BROCHURE V2. TM832EUL ROHS	086L004745-013
	LABEL SENSORMATIC DEVICE TM832EUL ROHS	087G008160-012
	LABEL CHECK POINT DEVICE TM832EUL ROHS	087G008161-019
	LABEL SN TM833EUL ROHS	087L007660-015
	LABEL WARNING FOR LION POLYMER BATTERY TM833EUL ROHS	087L008071-020
	LABEL WARNING REPLACEMENT ALK BATTERY TRAY TM833EUL ROHS	087L008163-013
	LABEL ST LENS PROTECT FILM TM833EUL ROHS	087L008186-010
	BAG PE 630*580*0.08MM TM832EUL ROHS	088L003537-017
	BAG PE 80*120*0.03MM ROHS	088L120080-20003
	PE PVC BAG:90-150MM (T=0.03MM)	088L150090-20000
	PE PVC BAG:38*200mm(T=0.03mm)	088L200038-20007
	BAG PE PVC 105*230*0.03MM ROHS	088L230105-20002
	PE PVC BAG:155*265MM(T=0.05MM)	088L265155-20001
	WRIST STRAP	123L250600-20004

BELT CLIP PACKING MATERIAL ASSEMBLY

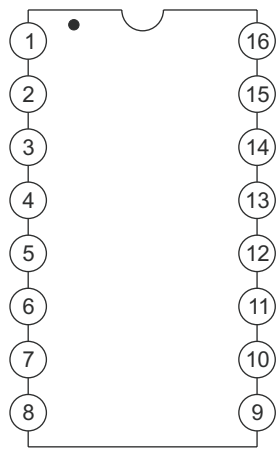
	TM833USL/PKG MAT'L/BELT CLIP/ COBRA/US/BLK/REV.0	A29P1700105L0005
	PLAS CLIP TOP ABS+PC BLK 3U2X TM832EUL ROHS	056L006992C019
	PLAS CLIP BASE ABS+PC BLK 3U2X TM832EUL ROHS	056L006993C016
	METAL AXLE FOR BELT CLIP S/S	063L003321-00007
2	SPRING FOR BELT CLIP	065L376584-50004
	BAG PE 80*120*0.03MM ROHS	088L120080-20003

ACCESSORY ASSEMBLY

	TM833EUL/ACCESSORY/ COBRA/EU/BLK/REV.0	A29P1700202L0005
	ADTR S *** -12 **HZ 750MA D- C MERRY RD-0608-K04 VDE ROHS	073L999226-ME014
	PE PVC BAG:120*150mm(T=0.03mm)	088L150120-20005
	TRADING ITEM CIG LIGHTER (W/FUSE 2A)MERRY TM832EUL RoHS	712L000092-010

IC LEAD IDENTIFICATION AND INTERNAL DIAGRAM

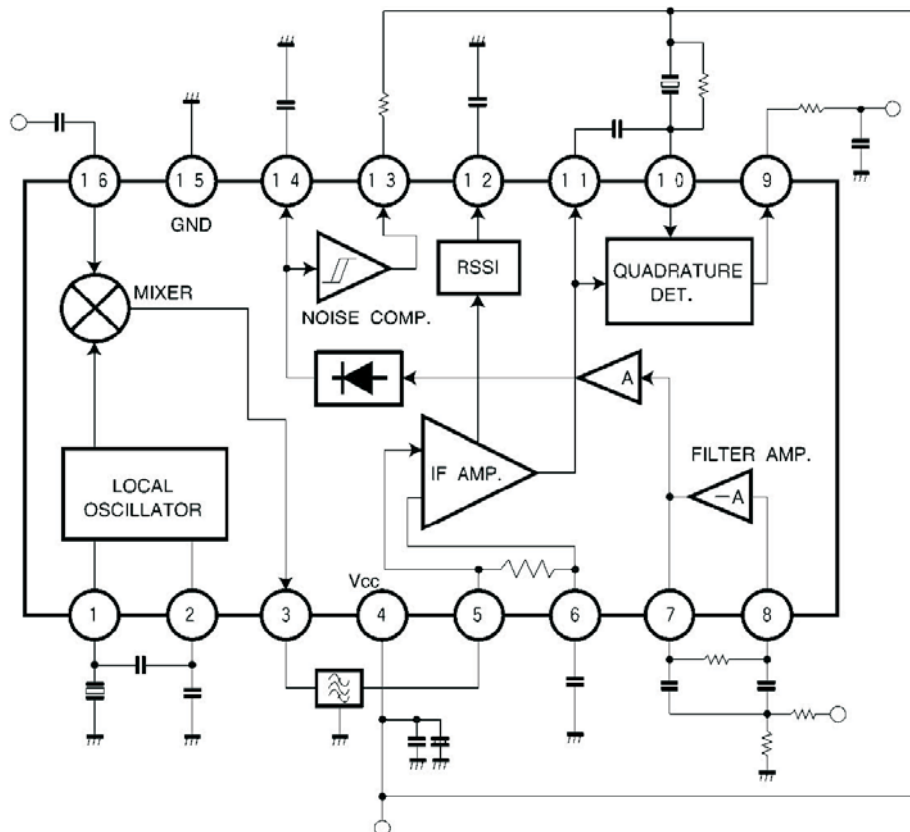
U1-BA4116FV



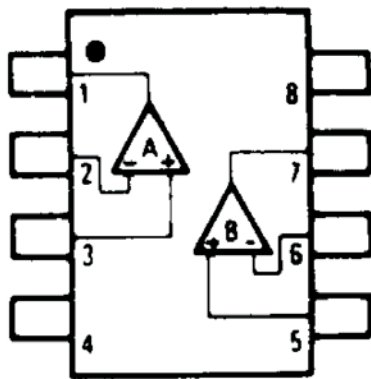
16TSSOP

PIN FUNCTION

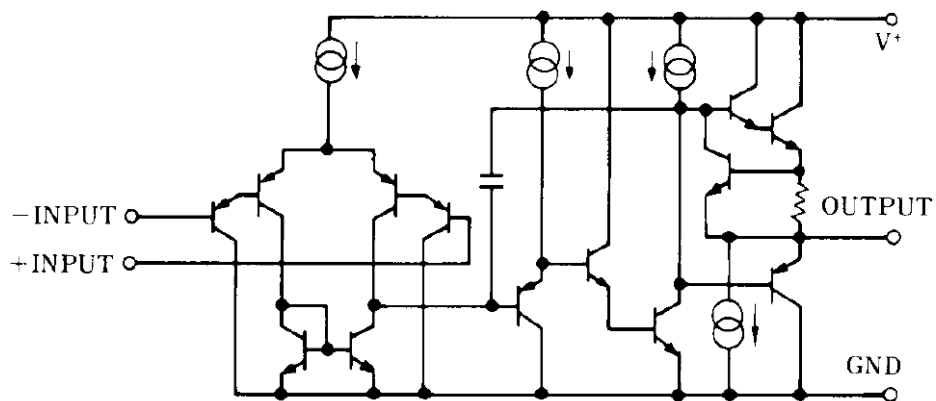
1. OSC1
2. OSC2
3. MIXER OUT
4. VCC
5. IF IN
6. BY PASS
7. FILTER OUTPUT
8. FILTER INPUT
9. AUDIO
10. DISCRIMINATOR
11. IF OUTPUT
12. RSSI
13. COMP OUTPUT
14. COMP INPUT
15. GND
16. MIXER



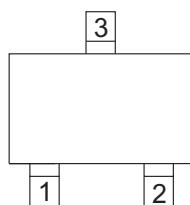
U2-NJM2904M



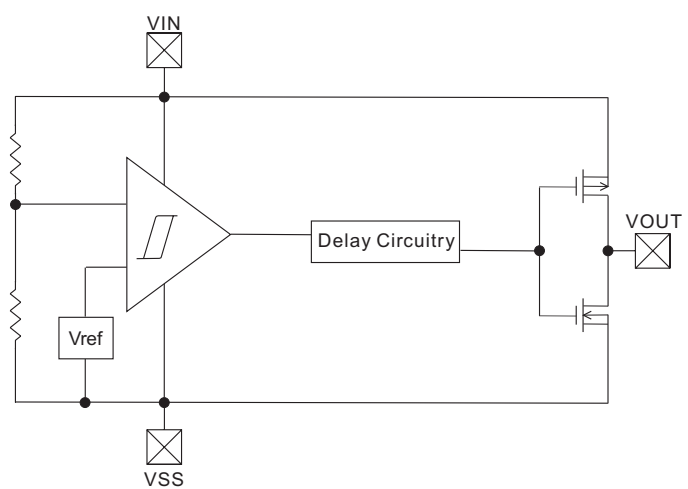
PIN FUNCTION
 1.A OUTPUT
 2.A - INPUT
 3.A +INPUT
 4.GND
 5.B +INPUT
 6.B - INPUT
 7.B OUTPUT
 8.V⁺



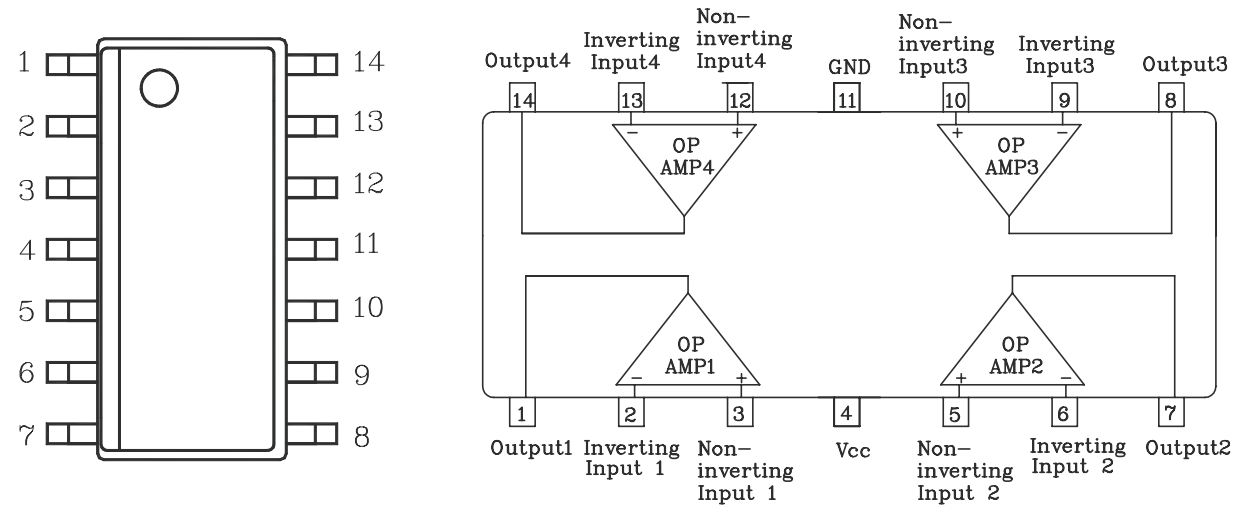
U3-XC61FC4012MR



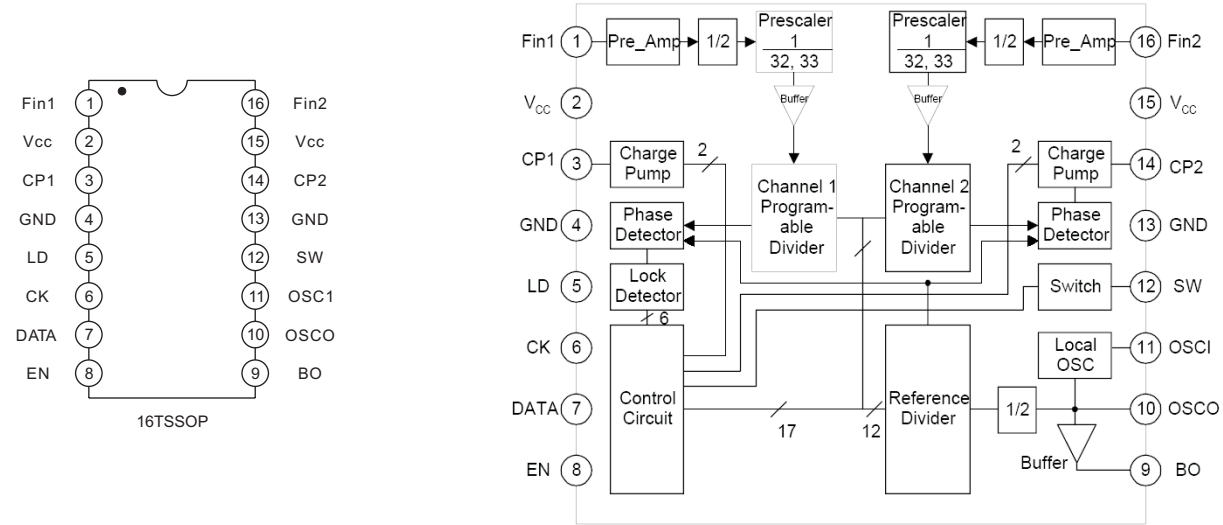
1. VOUT
 2. VSS
 3. VIN



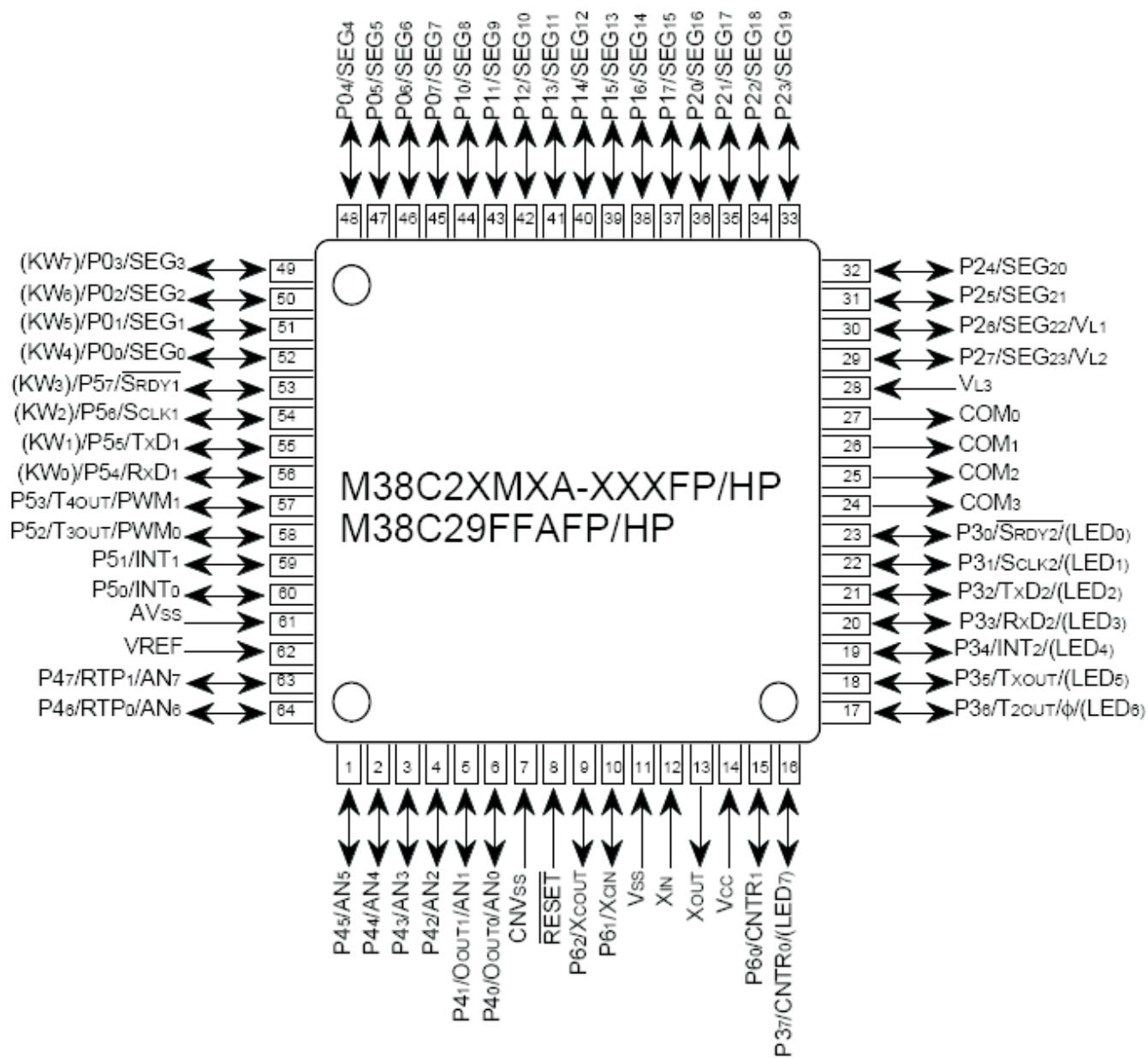
U4/U5/U02-S324

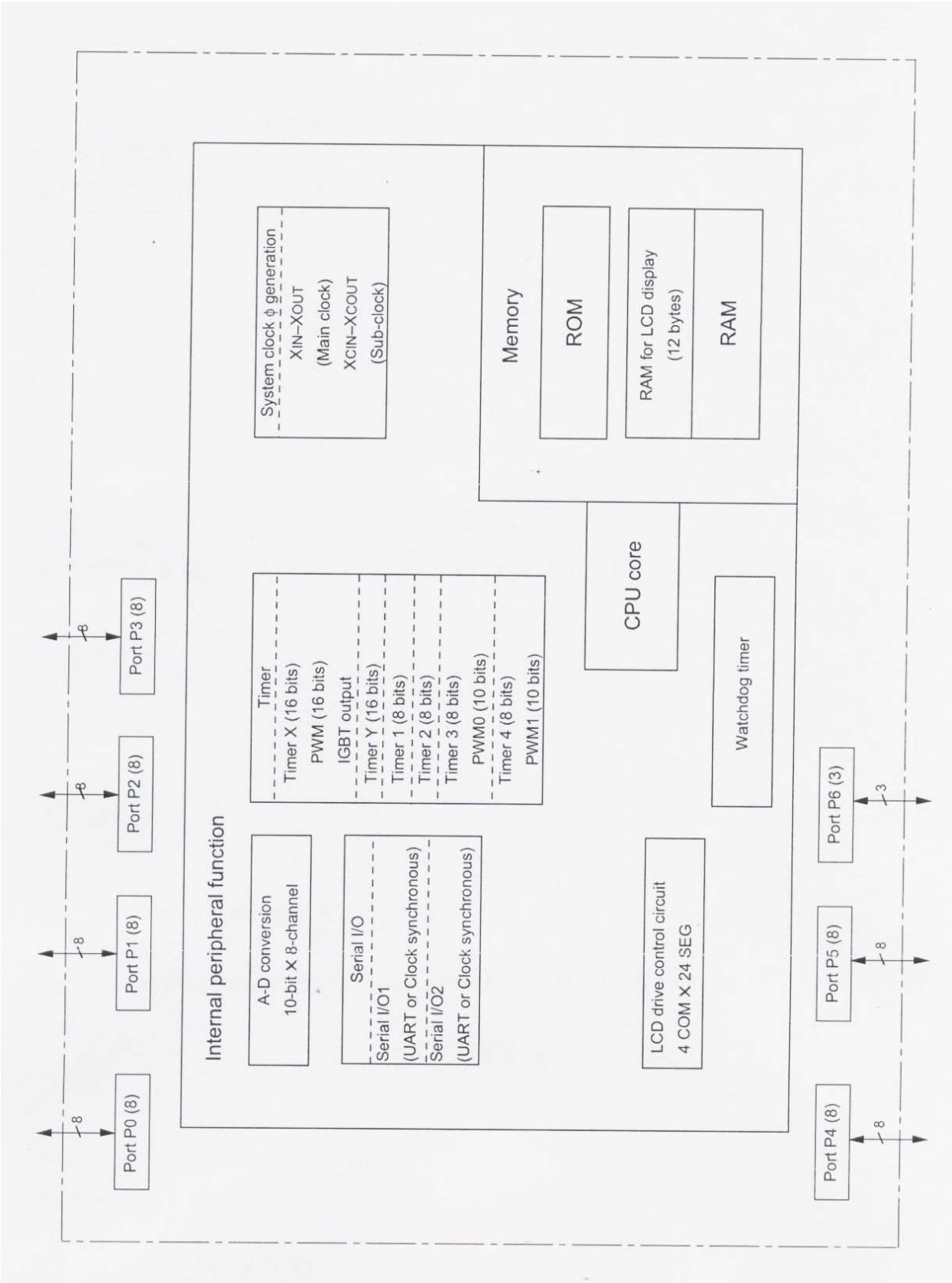


U6-SIT8825B01-R090 DPLL

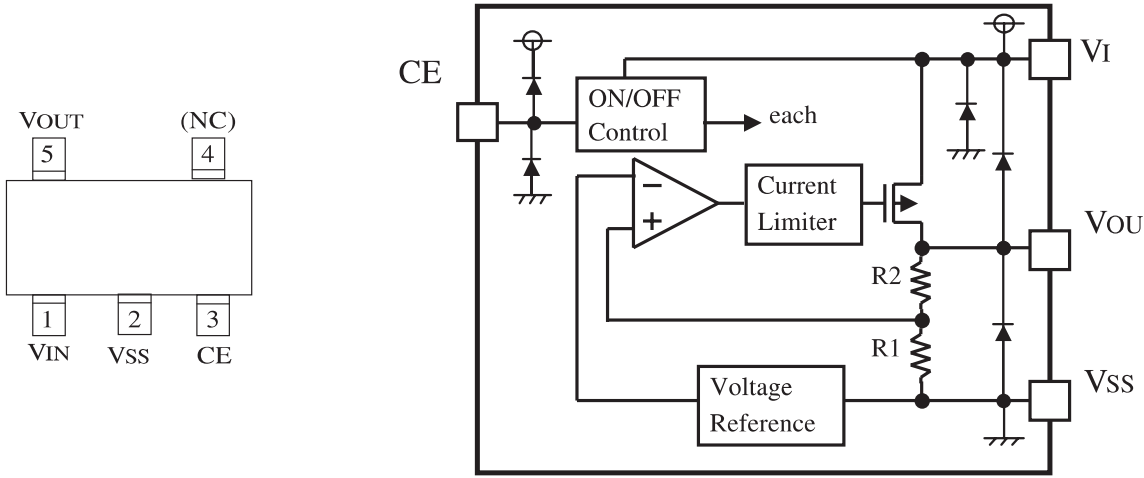


U7-M38C29FFAHP60K

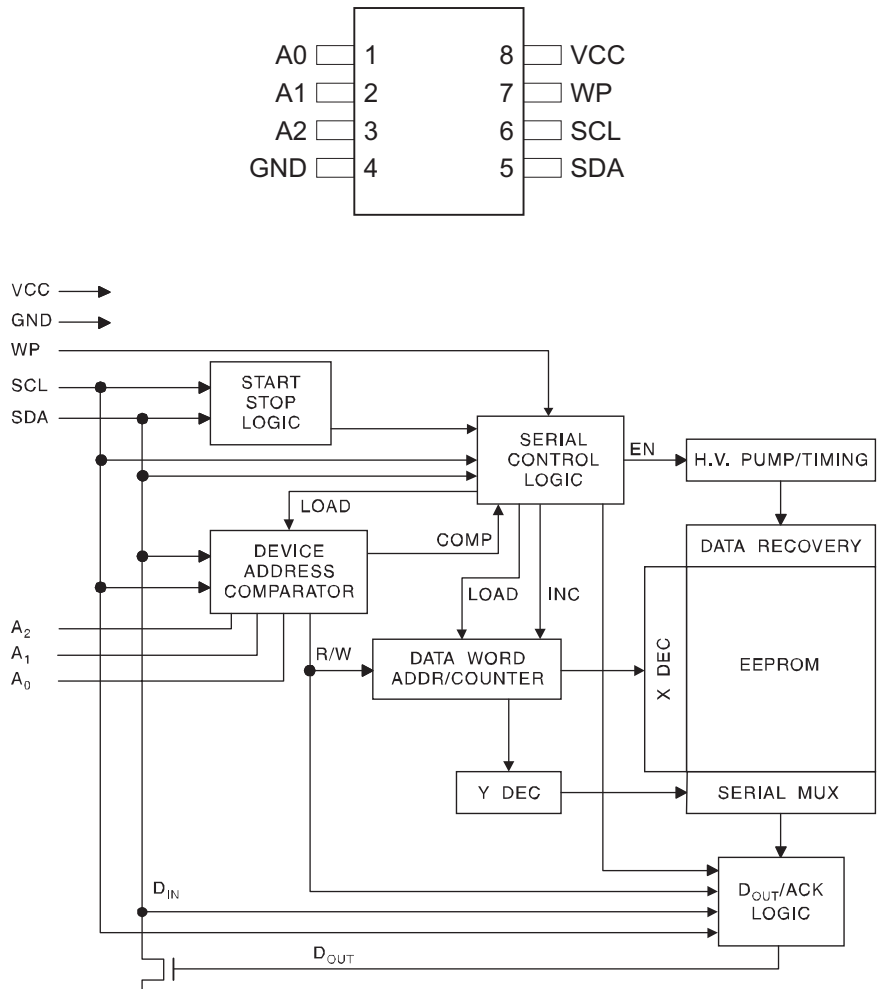




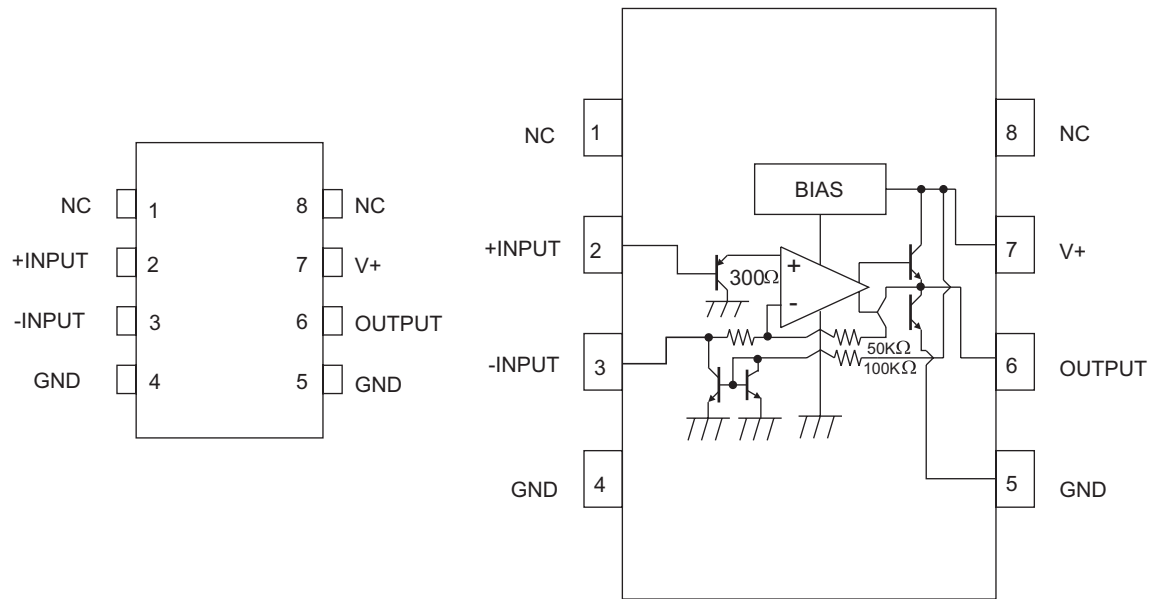
U8-XC6204B502MR



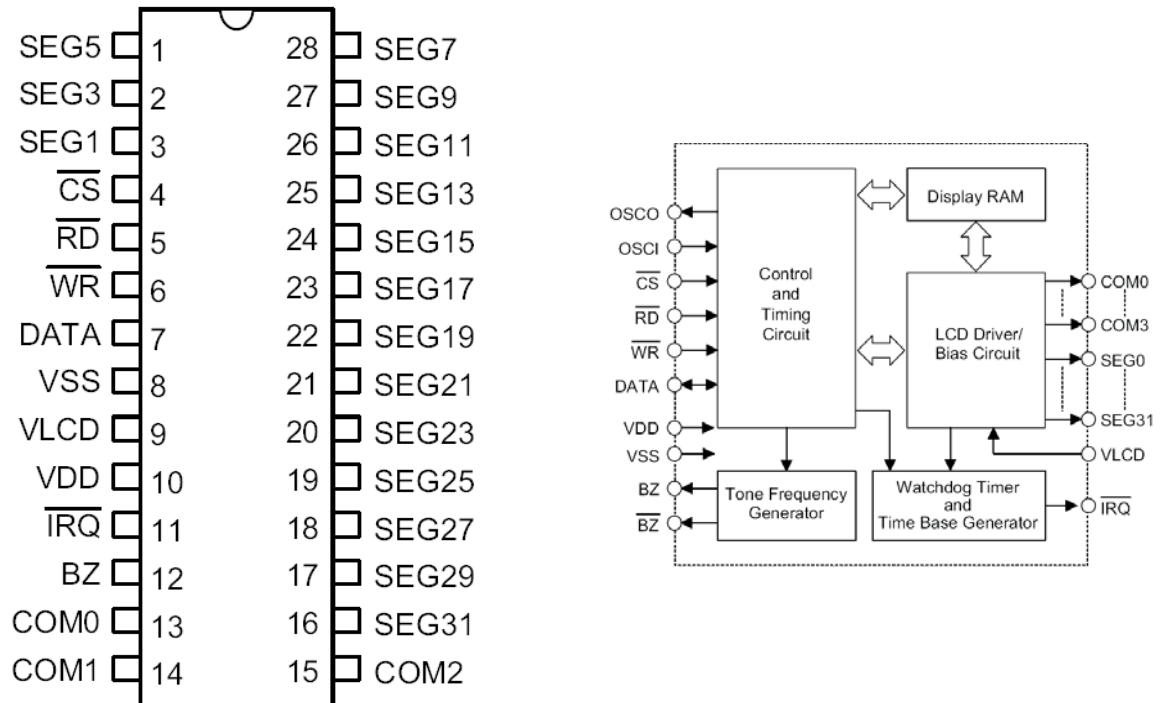
U9- AT24C16N

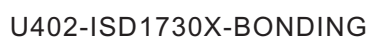


U11-NJM2070

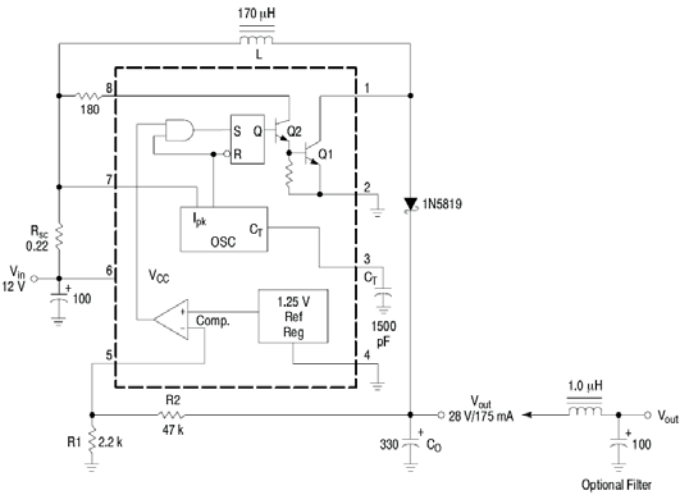
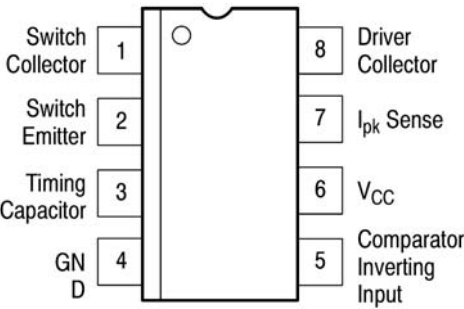


U401-HT1621-DICE

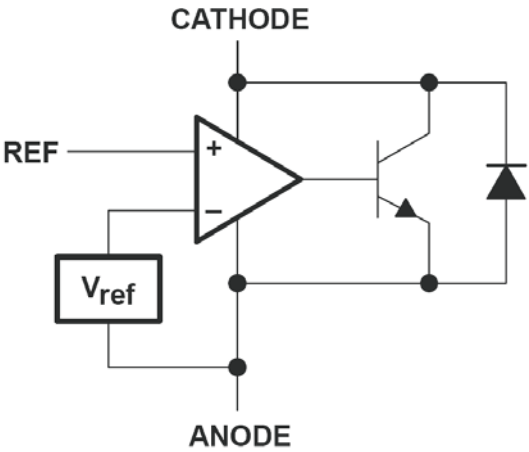
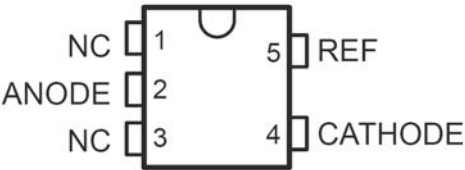




U01-MC34063AD

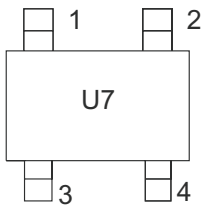


U03 TL431DBVR



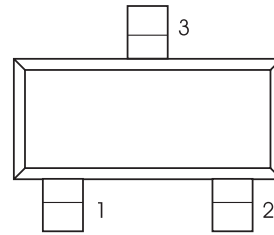
TRANSISTOR LEAD IDENTIFICATION

3SK318



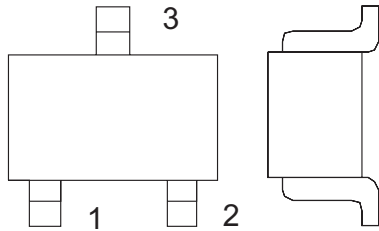
1. Gate 1
2. Gate 2
3. Drain
4. Source

MMBT3904
MMBT3906



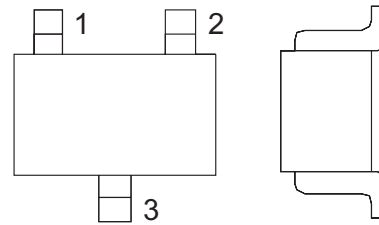
1. Base
2. Emitter
3. Collector

2SC4901
MPS8550S
2SC4097R



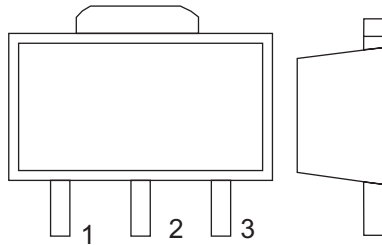
1. Base
2. Emitter
3. Collector

2SK302



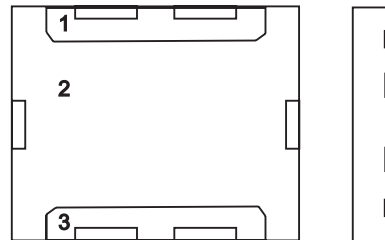
1. Gate
2. Drain
3. Source

2SK3078



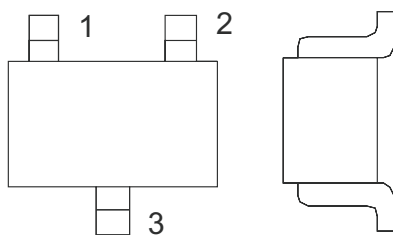
1. Gate
2. Source
3. Drain

RD07MVS1



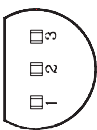
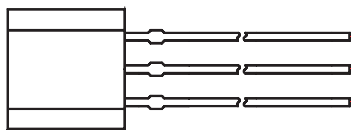
- Terminal No.
1. Drain (output)
 2. Source (GND)
 3. Gate (input)

2SK210Y



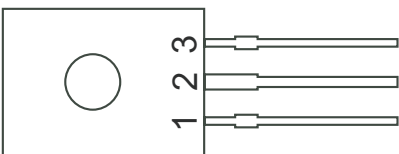
1. Drain
2. Gate
3. Source

KTC9014



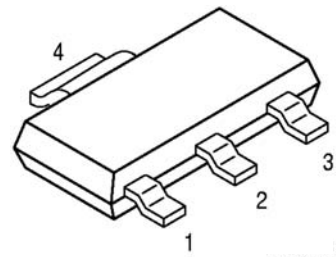
- 1. Emitter
- 2. Base
- 3. Collector

2SB772P



- 1. Emitter
- 2. Collector
- 3. Base

BSP613P



- 1. Gate
- 2. Drain
- 3. Source
- 4. Drain

VOLTAGE CHART

U1 BA4116FV

PIN	1	2	3	4	5	6	7	8	9	10	11	12
Rx(V)	4.78	4.20	3.45	4.81	4.38	4.39	0.64	0.60	/	/	/	/

PIN	13	14	15	16
	/	SQL	GND	RFIN
Rx(V)	0	0	0	0.94

U2 NJM2904M

PIN	1	2	3	4	5	6	7	8
Tx(V)	4.5	0.48	0.48	0	4.70	4.80	0.40	7.20

U3 XC61FC4012MR

PIN	1	2	3
Tx(V)	5.00	0	5.00
Rx(V)	5.00	0	5.00

U4 S324

PIN	1	2	3	4	5	6	7	8	9	10	11	12
Tx(V)	/	/	/	4.80	1.86	1.86	1.86	1.86	1.86	1.86	0	1.78
Rx(V)	Pulse	1.56	1.30	4.80	/	/	/	/	/	/	/	/

PIN	13	14
Tx(V)	1.80	1.80
Rx(V)	5.00	0

U5 S324

PIN	1	2	3	4	5	6	7	8	9	10	11	12
Rx(V)	1.70	1.70	1.70	4.80	2.40	2.40	2.40	2.40	2.40	2.38	0	1.70

PIN	13	14
Rx(V)	1.70	1.70

VOLTAGE CHART-CONTINUED

U6 SIT8825B01-R090

PIN	1	2	3	4	5	6	7	8	9	10	11	12
	FIN1	VCC		GND				EN	BO	OSCO	OSCI	SW
Rx(V)	4.82	4.82	1.63	0	4.81	0	0	0	3.65	3.89	4.73	0

PIN	13	14	15	16
	GND		VCC	FIN2
Rx(V)	0	0	4.82	4.82

U8 XC6204B502MR

PIN	1	2	3	4	5
	VIN	VSS			VOUT
Rx(V)	7.20	0	7.20	0	4.99

U9 AT24C16BN-SH-T

PIN	1	2	3	4	5	6	7	8
	A0	A1	A2	GND	SDA	SCL	WP	VCC
Tx(V)	0	0	0	0	4.98	0	0	4.99

U10 74HC4053PW

PIN	1	2	3	4	5	6	7	8	9	10	11	12
Tx(V)	0	1	0	0	-0.20	5.00	-0.40	0	0	5.00	0	0
Rx(V)	0	1	0	0	0	0	-0.40	0	0	5.00	0	0

PIN	13	14	15	16
Tx(V)	1	0	0	5.00
Rx(V)	1	0	0	5.00

U11 NJM2070M

PIN	1	2	3	4	5	6	7	8
	NC	IN	FIL	GND	GND	OUT	VCC	NC
Rx(V)	0	0	0.60	0	0	3.26	7.16	0

VOLTAGE CHART-CONTINUED

U01 MC34063AD-CHARGER

PIN	1	2	3	4	5	6	7	8
Charging	7.5	0	0.65	0	5.70	12.00	12.00	8.40
Standby	0.55	0	0.65	0	0.00	12.00	12.00	2.20

U02 S324-CHARGER

PIN	1	2	3	4	5	6	7	8	9	10	11	12
Charging	0	1.60	0.50	12.00	0.38	0.30	11.00	1.60	0	0.07	0	2.50
Standby	11.00	0	0.50	12.00	0	0	0	0	0	0	0	2.20

PIN	13	14
Charging	2.50	5.50
Standby	2.50	0

U03 TL431IDBVR-CHARGER

PIN	1	2	3	4	5
Charging	2.5	0	0	0	2.50
Standby	2.5	0	0	0	2.50

VOLTAGE CHART-CONTINUED

	Q1 2SC4901YK			Q2 2SC4901YK			Q3 2SC4901YK			Q4 2SC4901YK		
PIN	B	E	C	B	E	C	B	E	C	B	E	C
Tx(V)	0.70	0	0	/	/	/	0.80	0.25	4.54	0.74	0	3.76
Rx(V)	/	/	/	0.71	0	1.5	/	/	/	/	/	/

	Q5 2SC4901YK			Q6 RD07MVS1			Q7 2SC4901YK			Q9 MMBT3906LT1		
PIN	B	E	C	G	S	D	B	E	C	B	E	C
Tx(V)	/	/	/	2.30	0	6.80	/	/	/	/	/	/
Rx(V)	0.70	0	3.90	/	/	/	0.78	0	2.32	3.40	4.10	4.02

	Q8 3SK318			
PIN	G1	G2	S	D
Tx(V)	/	/	/	/
Rx(V)	1.57	1.57	0.48	4.29

	Q10 MMBT3904LT1			Q11 MMBT3904LT1			Q12 2SK3078			Q12 2SK3078		
PIN	B	E	C	B	E	C	G	S	D	G	S	D
Tx(V)	0.65	0	0	0	0	3.80	1.08	0	7.20	1.08	0	7.20
Rx(V)	/	/	/	0.68	0	0	/	/	/	/	/	/

	Q13 2SK302			Q14 2SK210Y			Q15 MMBT3906LT1			Q17 MMBT3904LT1		
PIN	G	S	D	G	S	D	B	E	C	B	E	C
Tx(V)	/	/	/	0	0.56	4.1	/	/	/	5.00	0	6.64
Rx(V)	0	0.60	4.00	/	/	/	4.90	4.90	0	5.00	0	6.64

	Q16 MPS8550S			Q21 MMBT3904LT1			Q22 MMBT3904LT1		
PIN	B	E	C	B	E	C	B	E	C
SPK(ON)	6.58	7.20	7.20	4.99	4.28	6.65	4.96	4.28	7.20

	Q18 MPS8550S			Q20 2SC4097R			Q24 MMBT3906LT1			Q25 MMBT3906LT1		
PIN	B	E	C	B	E	C	B	E	C	B	E	C
Tx(V)	6.61	7.20	4.91	/	/	/	4.00	4.90	4.54	4.95	4.18	4.72
Rx(V)	6.61	7.20	4.91	0.68	0	0	/	/	/	4.95	4.18	4.72

VOLTAGE CHART-CONTINUED

	Q23 2SC4097R		
PIN	B	E	C
Moto(on)	4.50	3.20	6.80

	Q27 MMBT3904LT1		
PIN	B	E	C
Mate	0.65	0	0

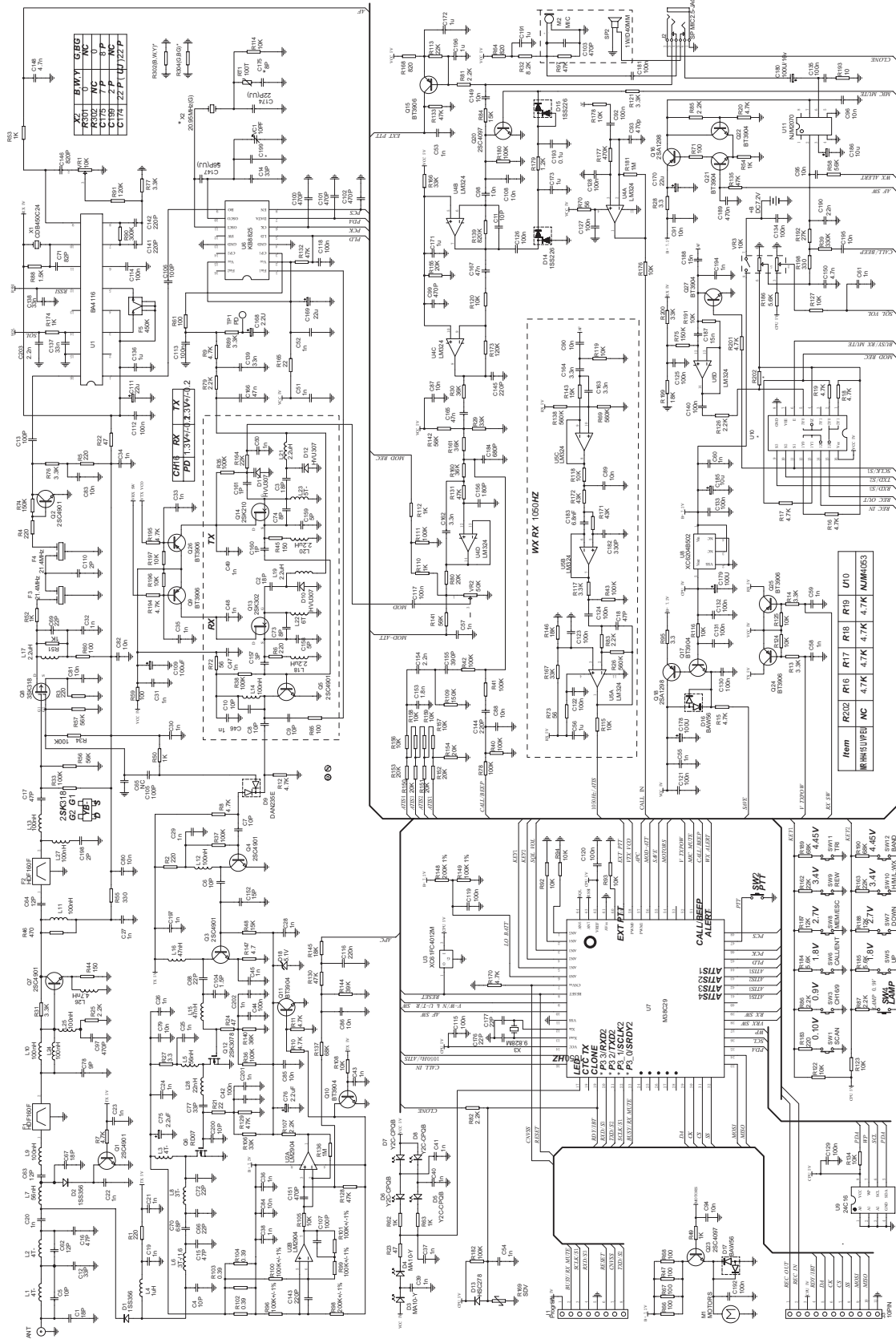
	Q26 MMBT3906LT1		
PIN	B	E	C
Tx(V)	3.48	4.10	4.10
Rx(V)	/	/	/

CHARGER

	Q01 MMBT3904LT1			Q1 BSP613P			Q02 MMBT3904LT1			Q04 MMBT3904LT1		
PIN	B	E	C	S	G	D	B	E	C	B	E	C
Charging	1.70	12.00	2.50	12.00	10.00	8.20	9.00	10.00	12.00	0	0	10.00
Standby	0	12.00	0	12.00	7.40	12.00	3.90	7.40	12.00	0.70	0	0

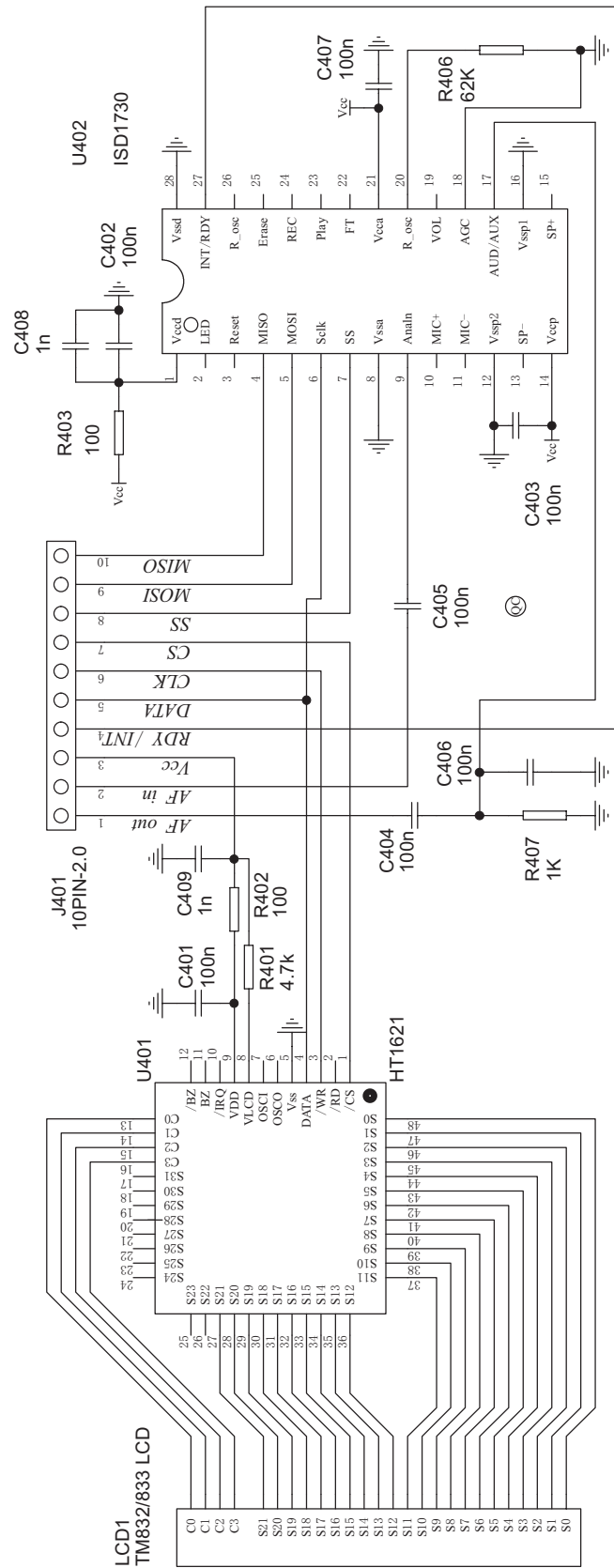
	Q05 MMBT3904LT1			Q06 MMBT3904LT1		
PIN	B	E	C	B	E	C
Charging	0	0	0.70	0.70	0	0
Standby	0.70	0	0	0	0	10.00

SCHEMATIC DIAGRAM-MAIN

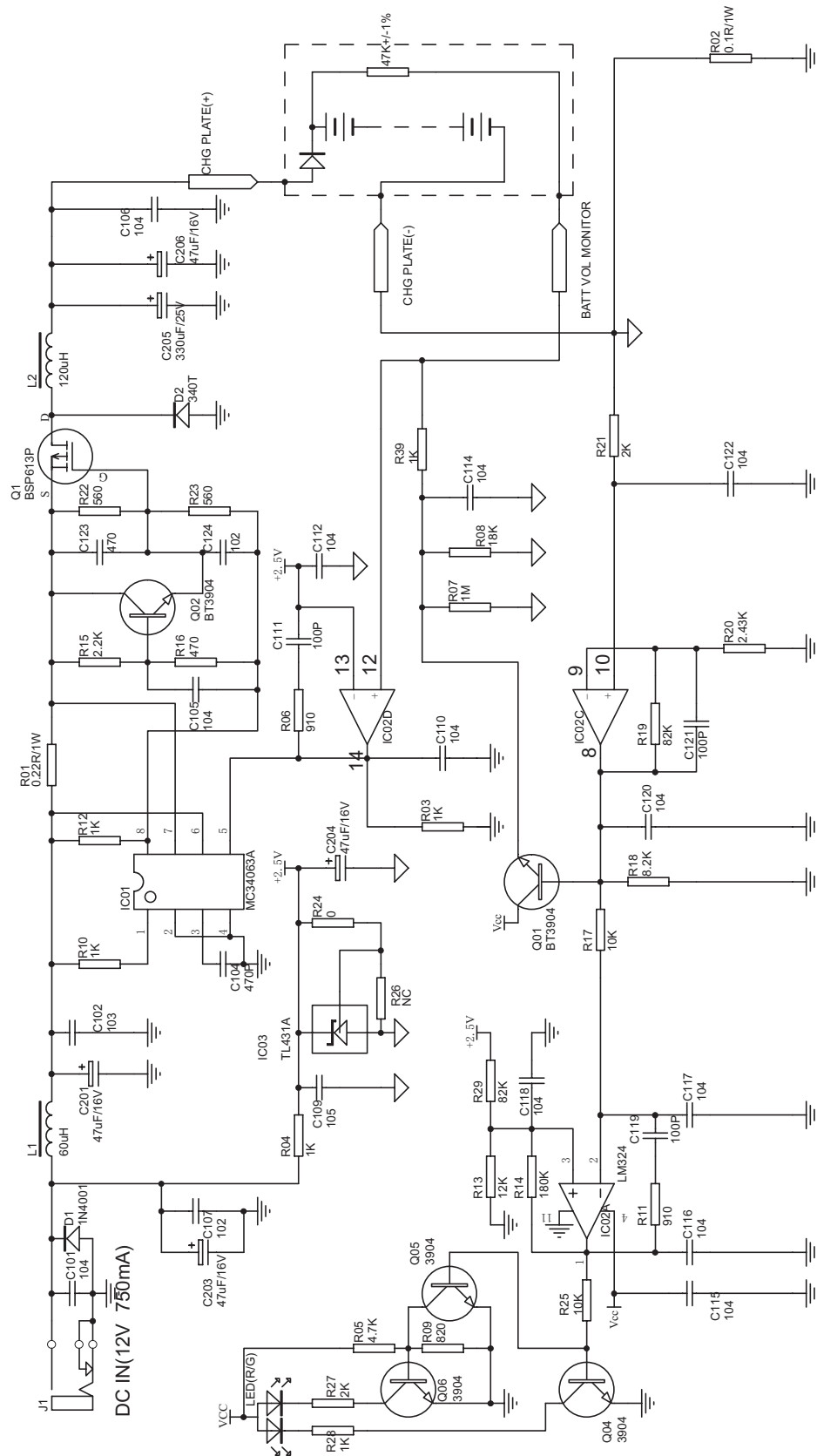


- Notes:**
1. All resistance values are indicated in "ohms" ($k=1000$ ohms, $M=1000$ kohms).
 2. All capacitance values are indicated in " μF " ($p=10^{-6}$ μF).

SCHEMATIC DIAGRAM-LCD



SCHEMATIC DIAGRAM-CHARGER



7.4V Li-on Batt 750mA Charger
CHARGING: RED LED Light
STANDBY & Full charged: GREEN LED Light